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THE TREATMENT OF PNEUMONIA IN EARLY CHILDHOOD

E. P. COOK. M. D., F. A. A. P.
San Jose, California

Knowledge gained in recent years of the etiology and pathology of the pneumonias has not given striking decrease in mortality. With no specific remedy, the problem is a challenge to our therapeutic ingenuity and resourcefulness. Many agents of worth are used. I purpose to assemble and coordinate these procedures into a systematic plan of treatment. In the foreground is the careful management of the child as a whole, rather than treating exclusively the major pathological process.

The upper air passages and even the lungs are inhabited by a great variety of microorganisms; broncho-pneumonia develops under a variety of conditions. Infectious diseases are the most important group of predisposing causes. Measles, whooping cough, and influenza are familiar examples. Simple infections of the respiratory tract, the so-called mixed respiratory infections, and bronchitis are also of the utmost importance. There may be great difficulty in determining whether or not a bronchitis has advanced to a point where it should be called bronchopneumonia. Fortunatetly, treatment does not depend thereupon; we must be guided by the degree of illness as evidenced by toxemia, fever, and general prostration.

The clinical course of a primary infection is fairly definite. The abrupt onset with fever, prostration, and rapid pulse denotes an acute infection. The appearance of cough and dyspnea will direct attention to the lungs, where the initial signs of faint or impure breath sounds over a localized area are followed in a day or two by bronchial breathing.

PROPHYLAXIS: Pneumonia is easiest to treat by preventing. It is not controllable by the ordinary public health methods of isolation, quarantine and supervision and water supply. Undernourished and delicate children should be carefully protected from sudden lowering of the body resistance by chilling, and from contact with individuals suffering from respiratory infections or other infectious diseases, particularly measles. whooping cough, and influenza. Persons with acute or chronic upper respiratory infections should be kept away from the premature and congenitally weak infants. Mild, apparently insignificant upper respiratory infections should never be ignored.

I consider it of the utmost importance, though frequently accomplished with difficulty, to put children to bed when they have fever until entirely well. Too often mothers allow the pleas of the children to overrule their judgment and slight colds become serious by reason of exposure and fatigue. Furthermore, it is common for parents to allow children to get up as soon as the temperature becomes normal. The only safe rule is that an afebrile period of at least 48 hours should elapse after a respiratory infection before a child is allowed out of bed. Even then it should be a matter of one or two hours the first day, with a convalescent period of three days before he is allowed to go to school. A child has no judgment in conserving his strength and the minute he is up he goes at top speed until exhausted.

NURSING CARE: I know of no other disease in which it is more necessary to have a capable, quiet nurse or attendant who understands children and the value of sick room serenity and efficiency. With the hospital patient this is taken care of automatically; but the majority of cases are treated at home and by a mother usually willing and cooperative, always anxious, but often lacking in nursing experience. Children are quick to sense and

respond to the nurse who is quiet, confident, and hopeful. Indecision, lack of confidence, over anxiety, and tears, have no place in a sick room. We must not deceive ourselves by thinking that a child is too young to notice these things and be affected by them.

A graphic temperature chart is suggested in every case as a most valuable aid in following the course of a fever, and may furnish the first indication of a complication.

Warmed fresh air is vital to the patient's well being. The air should be warmed to a temperature of between 65 and 68 degrees as actually recorded by a thermometer placed near the child. Such a temperature permits light clothing. It is exhausting to a hot, restless child to struggle under many layers of clothing and bed covers, lifting the added weight with every inspiration.

In addition to warming, the air also may be moistened to advantage. Plain unmedicated steam is very effective, or any of the usual volatile oils may be added to the water. Inhalations may be given for 30 minutes at intervals of every two to three hours and preferably under a canopy. It is not advisable to use a closed tent because of the extreme heat which develops, with perspiration and possible chill afterwards.

Inhalations should be continued as long as there is distressing cough or scanty secretions. The milder cases may be sufficiently relieved by simply allowing a kettle to boil constantly in the sick room.

DIET: It is possible to give specific instructions regarding diet, but these vary with the individual child. Bearing in mind the possible protracted course of the disease, it is necessary to encourage as much nourishment as the digestive apparatus can tolerate. The foods should be bland and easily digestible. These may include, milk, broths, soft eggs, pureed vegetables, creamed vegetable soups, scraped beef, jelly, junket, custard. and fruit juices. Milk is sometimes vomited but this may be avoided by boiling and diluting it, or giving evaporated milk with lactic acid. In general, it is better to offer smaller amounts of food at four hour intervals than three large meals a day.

COUNTER-IRRITANTS: The use of counter-irritation is beneficial when pleural pain and cough are prominent. Mustard plasters are perhaps most effective. Variations in the strength of mustard and the sensitiveness of the skin make it impossible to give definite instructions regarding proportions of the ingredients until a trial has been made.

HYDROTHERAPY: A maxim which I have always thought particularly apt is "plenty of water inside and out." A child will rarely voluntarily take sufficient to meet the demands of his toxemia. Further intake may be encouraged by offering orangeade, lemonade, canned fruit juices or bottled soda water, given as such or diluted with water.

A sponge bath at a temperature of 90 degrees given under the covers so that the child will not be exposed to the air often results in a refreshing sleep of several hours. An ice bag to the head and a tepid sponge bath can transform a delirious patient into one enjoying a quiet sleep. It is not the hyperpyrexia that needs control, but the accompanying nervous manifestations.

Just a word regarding sponging: Most mothers fear the procedure as one which may cause the child to take more cold. This should not result if the patient is not exposed and the bath begun at a temperature of 95 degrees, gradually being reduced to 90 degrees and even 84 degrees according to the degree of fever. To be most effective the cloth should be wrung fairly dry, the bath continued for 10 to 15 minutes, and the moisture allowed to evaporate on the skin.

ABDOMINAL DISTENTION: This unpleasant occurrence is fairly frequent. When it first appears all food should be withheld for 12 hours and a cathartic given.

Turpentine stupes and enemas will relieve the milder cases. If these are ineffective, 0.5 c.c. of obstetrical pituitrin should be given every three hours, or as needed.

A persistence of the condition after these measures have failed, and they unfortunately will fail sometimes, usually means the development of peritonitis or approaching death as a result of circulatory failure.

DRUG TREATMENT: The parents' importunate demands that something more be done in a critical case may lead us into the error of prescribing useless medication which may irritate and exhaust the child in the effort to administer it. Furthermore it is apt to turn him against taking nourishment by mouth

and make it difficult to give that most needed, if not actually producing a digestive upset. These parental demands may be met by emphasizing the importance of rest, less disturbance, and the hour by hour nursing care. I believe we are well repaid for time spent in education. There are definite indications for drug therapy, and a few simple drugs serve us well.

Children with pneumonia usually **cough** and this demands consideration. The warmed fresh air, inhalations, and counter-irritation are the first things. Hot drinks are soothing. One ounce of hot milk with a little bicarbonate of soda, given frequently, will often allay a spasm of coughing. In the early stage when secretions are scanty, syrup of hydriodic acid is effective.

Rest and sleep are necessary to conserve strength. Hypnotic drugs such as barbital and chloral hydrate serve if no pain is present. If there is pain, codein is by all odds the drug of choice. It may be given by mouth or hypodermically. Morphine. while a more powerful, pain-relieving drug than codein, is not well tolerated. Young children seem to be much more susceptible to morphine in proportion to body weight than adults. This is probably due to their greater oxygen metabolism with resulting greater effect when this is interfered with by morphine. Further, codein, like morphine, will depress the respiratory center and raise its threshold for carbon dioxide. There results an increase of CO_2 in the lungs with consequent liberation of carbonic acid which inhibits the growth of pneumococci. Finally, and of great importance, is the fact that codein is not addiction producing.

Cardiac failure has always been most feared in pneumonia. Clinical study has shown that as an isolated event it occurs very seldom. It is commonly associated with terminal collapse with respiratory failure, abdominal distention, acute sepsis. and rapid death. For a mild degree of cardiac failure, as evidenced by a too rapid and irregular pulse, caffein, and digitalis are the stimulants of choice. Reserve such stimulation for the time when, and if, indicated. Digitalis is, of course. the choice if auricular fibrillation occurs. Camphor in oil is a drug deserving of the high regard in which it is held, both as a stimulant and because of its bacteriostatic effect upon the pneumococcus. Skepticism and faith, both in the extreme, surround the use of alcohol. We like it in the grave pre-critical period. Brandy, or whiskey, in doses of 20 to 30 drops in sweetened water may be given to a young child every three hours.

Atropine, as a respiratory stimulant and at those times when profuse bronchial secretions seriously embarrass respiration, may be almost life saving. Children tolerate it well. A single dose of 1/400 grain to a child of four years may completely dry up the secretions and overcome the dyspnea and restlessness.

Our list of most useful drugs then includes barbital, codein, caffein, digitalis, camphor in oil, and atropine.

BLOOD TRANSFUSION: I have long been interested in the effect of blood transfusion in cases of prolonged acute infections, and while it is not advisable to increase the blood volume by any large amount when pulmonary congestion exists, small transfusions, perhaps repeated, are not subject to this objection. Recently four infants under 16 months of age, who had been sick from four to eight days with profound toxemia and prostration of severe bronchopneumonia, were given amounts of blood varying from 85 to 125 c.c. Each one showed a prompt decline of temperature with such improvement in the general condition that they were convalescent within a week.

Serum therapy is an attempt to confer immediate immunity on the patient by administration of a serum which contains a large amount of the immune bodies which the patient is trying to develop. These immune substances are all anti-bacterial rather than antitoxic. No toxin-antitoxin mechanism has ever been demonstrated in lobar pneumonia.

Until recently specific therapy has not been practical due to the time necessary for typing the pneumococcus. If two or three days must elapse while waiting for a report from the laboratory the patient's condition is often such, one way or the other, as to render serum of little value. The rapid Neufeld reaction for typing as proposed by Sabin is simple, well within the powers of the small hospital with moderate laboratory facilities or even the clinician himself.

The first requirement is to obtain sputum directly from the lungs. A sterile swab passed

low in the throat will usually induce a cough and catch the sputum. Older and cooperative children will expectorate the raised sputum. Kernels of sputum are spread on cover slips with a two mm. platinum loop, and an equal quantity of undiluted rabbit serum (type I serum to one, type II to another. etc.) and a loopful of Loeffler's alkaline methylene blue added to each. The cover slips are then inverted over hollow-ground glass slides and examined after two minutes with an oil immersion lens and artificial blue light. In a positive reaction the capsule becomes swollen, is refractile and does not take the stain; the organism within it is stained blue.

The clinician may find himself confused regarding the types of pneumococci, their relative frequency in lobar pneumonia, and the importance of each type. This is particularly true when one attempts to correlate the statistical studies made in various places and at different times. Three distinct serological types have been demonstrated: Types I, II, and III, and a mixed group, IV, containing all other strains of pneumococci which fail to react with the respective type antisera. Group IV has been further divided into twenty odd types. Six different observers, three in the United States and three in England, have recorded the frequency with which the different serological types occurred in each of their series, as follows:[1]

Type I varied from 25 per cent in one series to 45 per cent in another; type II from four to 32 per cent; type III from 28 to 52 per cent.

These figures indicate that the incidence of the various types vary widely from place to place and from time to time, but in contrast to adults, the majority of pneumonias in infancy and childhood are due to the new types identified from the old group IV.[2,3] Mortality appears to be highest with type IV and lowest with type I, while group IV tends to have a lower mortality than any of the three main types.

Commercial antipneumococcus serum is readily available for types I and II and there seems to be little doubt as to its efficacy in type I even though there is little statistical evidence that the death rate has been decreased by its us. Serum is also available for types III, IV, V, VI, VII, VIII. IX, XIV, XV, XVIII, XIX and XXII.

Before adminnistering serum it is of the utmost importance to determine whether or not the patient is sensitive to horse serum. A history of hay-fever, asthma, or urticaria, or any previous injections of horse serum, would mean a possible sensitiveness. In addition the patient should be tested with the serum to be used. The intradermal test consists in the intracutaneous injection of 0.02 c.c. of serum diluted one to 10 with normal saline. An irregular urticarial wheal surrounded by a zone of erythema denotes sensitiveness. The conjunctival test, one or two drops of undiluted serum directly into the conjunctival sac, shows sensitiveness, by reddened and injected conjunctivae within 15 minutes.

If the tests reveal only a slight sensitiveness, serum may be given in graduated doses at half-hour intervals, beginning with a very small amount. A syringe loaded with adrenalin should always be at hand in case of a reaction. (It is also wise to have a tourniquet. Ed.) If both the intradermal and conjunctival tests are positive, the patient is so highly sensitive as to render inadvisable the administration of serum.

After 20 years the results of serum therapy are not such as to recommend its widespread use in pediatric practice. This is due chiefly to the natural low mortality of lobar pneumonia in children, and the relative infrequency of type I infections.

OXYGEN THERAPY: I always regard this as the ace-in-the-hole when a child becomes critically ill with pneumonia because it affords such rapid relief from the exhausting dyspnea and restlessness. It really seems to be life saving, though difficult to prove.

The primary purpose of oxygen therapy is to combat anoxemia.[4] Normally the oxygen content of arterial blood is approximately 90 per cent of its total capacity and in venous blood approximately 70 per cent. Under normal conditions the body is able to take up its required amount of oxygen from air with its one-fifth oxygen content. During pneumonia this ability is decreased, resulting in anoxemia—increased unsaturation.

There is a definite relationship between the degree of cyanosis and the per cent of arterial unsaturation. Cyanosis is the indication for oxygen therapy. For practical purposes detectable cyanosis of the finger nails and lips

represents approximately 10 per cent unsaturation, definite cyanosis 15 per cent, and marked cyanosis 20 per cent or more. It is most important to watch carefully for early cyanosis in order to institute oxygen therapy at the proper time, thereby preventing serious toxic changes which occur from anoxemia.

The dosage of oxygen to be most effective is fairly well established. A concentration below 30 per cent is rarely of value, while 30 to 35 per cent will generally lessen cyanosis, and the optimum is between 40 and 60 per cent. The most desirable pressure is two and one-half times that of the atmosphere, or 50 per cent.

Concentrations of 35 to 38 per cent may be obtained by a nasal catheter with a high-pressure oxygen tank and a calibrated reducing valve. With a double catheter 5.0 litres may be administered, the inspired air containing approximately 38 per cent oxygen. The terminal one inch of catheter should be perforated with several small holes. The funnel method of giving oxygen from a low pressure tank is practically useless.

To administer the optimum concentration it is necessary to use an oxygen tent. This equipment is well within the means of a small hospital or the private practitioner. The operation is so simple that a nurse can be instructed in its proper use in a few moments.

It should be remembered that the body stores no oxygen; so if oxygen is needed, the need is constant. The tent provides a method whereby oxygen enriched air may be continuously circulated at the optimum concentration, cooled to the desired temperature, and with the carbon dioxide content maintained at one per cent or less. Any increase over one per cent stimulates respiration which is usually not desired. A simple testing apparatus accompanies the tent, by means of which the tent air can frequently be tested for both its oxygen and carbon dioxide content. The latter should be kept at a concentration not exceeding one per cent in order to avoid overstimulation of the respiratory center.

On placing a restless, dyspneic, cyanotic child, with frequent pulse and respiration, into a tent, the beneficial effect is prompt and sometimes spectacular. The pulse and respiration become slower, the temperature often drops two degrees or more, breathing becomes easier, and increased comfort is followed by much needed rest. Cyanosis is relieved as the arterial oxygen saturation increases, and it will frequently prolong a life until such time as the child can build up his immunity.

COMPLICATIONS

DEHYDRATION: Some of the sickest children I have seen have been those who developed marked dehydration. Mention has already been made of forcing fluids by mouth. If a satisfactory amount, which means from one to two quarts a day, cannot be given in this manner, we must resort to infusion. For this purpose we prefer Ringer's or Hartmann's solution, which can be given in amounts varying from 200 to 500 c.c. every eight, 12, or 24 hours, with complete absorption and without irritation. The giving of fluids by rectum is unsatisfactory with children. A few ounces may be retained at first, but repetition of the procedure results in such irritation of the rectum that further retention is impossible.

OTITIS MEDIA: Infection of the middle ear is always possible when there is an infection in the upper air passages; in pneumonia it is a most frequent complication. The only certain way to detect the condition early is by frequent examinations of the ear drums. Otitis media may and frequently does occur without pain; the ears are objects of suspicion when there is a sudden rise in temperature, increasing restlessness, rolling of the head from side to side, or the definite complaint of earache.

Pain alone is relieved by the application of dry or moist heat. Carbolized glycerine is a favorite remedy and causes local anesthesia of the drum membrane which is particularly useful if paracentesis becomes necessary.

To irrigate or not is a matter of personal preference. I favor it, providing the procedure can be carried out without too much antagonism from the child.

An ear drum which shows increasing redness and swelling, and is painful, should be incised early. If carefully performed it will not introduce outside infection and does allow the escape of gas and serum. Prompt healing and relief of symptoms usually follow.

If distinct bulging of the drum membrane has occurred, paracentesis will be followed by drainage of pus for from a few days to three weeks and occasionally longer. During this period douching should be carried out careful-

ly, and the external ear kept scrupulously clean to avoid the development of furunculosis.

PYELITIS: Urinary tract infections frequently follow a focus in the respiratory passages and while pyelitis is not a common sequel of pneumonia, examinations of the urine are the only means to detect its presence. A moderate albuminuria is to be expected but persisting pyuria demands the recognition and treatment of pyelitis.

EMPYEMA: The treatment of this complication which we have found most effective is similar to that so ably described recently by Mason.[5] When the pleural effusion assumes the character of frank pus, as determined by repeated aspirations, open drainage by rib resection has been followed by the lowest mortality and most rapid obliteration of the abscess cavity.

MENINGITIS and MENINGISMUS: Symptoms of meningeal irritation demand early spinal puncture for two reasons: It is the only way by which we can differentiate meningitis from meningismus, and it is good treatment in either case. Repeated spinal drainage offers the best hope of relief in meningitis, and will alleviate the marked nervous symptoms of meningismus.

CONVALESCENCE

Children with pneumonia should be kept in bed at least one week with a normal temperature. This time should be extended for the severe cases and those with persisting cough, but in any case the child should feel perfectly well before he is allowed to get up. Recurrences are thus avoided and ultimate complete recovery hastened. Exercise at first should be limited and the initial period out of bed should be no longer than 15 to 30 minutes. This is gradually increased each day as returning strength permits. In allowing him to be out of doors, it must be remembered that he has become accustomed to the atmosphere of the house and fresh air periods must be carefully guarded and of short duration.

The diet need not be limited and the appetite is usually such that it is not necessary to force food. Cod liver oil is one of the best reconstructive tonics; syrup of ferrous iodid or iron and ammonium citrate should be added if the infection has been prolonged to the point of producing a secondary anemia.[3]

SUMMARY

The treatment of pneumonia necessitates meticulous care—care which safe-guards by early treatment of simple respiratory infections, which recognizes all possible complications and which is painstaking and tireless in surrounding the patient with all possible hygienic protection. The fundamental principles are proper rest, fresh air, food, hydrotherapy, oxygen, and symptomatic medication.

I know of no other disease in which the following words of a wise clinician are more appropriate: "Never despair of a sick child."

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PEPTIC ULCER: BENIGN OR MALIGNANT?

CHARLES T. STONE, M. D., F. A. C. P.
Galveston, Texas

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Peptic ulcer is the most frequent organic disease of the digestive tract; much is yet to be learned about it. Recurrent digestive symptoms, especially in the abdomen, with essentially normal health between attacks should arouse a suspicion of ulcer.

In common with essential hypertension, exophthalmic goiter, and irritable colon where dysfunction of the autonomic nervous system apparently plays a dominant part, peptic ulcer —especially duodenal—appears to be increasing in frequency. Making allowance for the deceptiveness of inferential evidence it seems that the present day struggle for existence will gradually occasion a higher ulcer incidence than now obtains. This is but one of the problems of ulcer that needs extensive investigation.

Most estimates give a ratio of duodenal ulcer to gastric of three or four to one but in his recent book Eusterman[1] states there are 12 pep-

tic ulcers of the duodenum to one of the stomach. Benign gastric ulcer occurs once to every three gastric cancers. At least two-thirds of the chronic peptic ulcers occur in areas not acid and pepsinogen secreting but are usually in parts of the digestive tract constantly bathed by acid gastric juice. It is generally held, therefore, that complete control over gastric acidity will do much in the treatment of ulcer. Gastric ulcers, strangely, are of equal frequency in men and women whereas duodenal ulcers are several times more common in men than in women; the reasons are unknown.

Chronic peptic ulcers exist more often than generally recognized without remarkable symptoms, or even with none. This emphasizes the necessity of considering ulcer in differential diagnosis in certain illnesses where the cause is obscure.

As a rule, the subjective complaints of peptic ulcer force the patient to seek medical aid. Given careful histories of chronic digestive disorders it should be possible to correctly diagnose ulcer in 75 per cent. There are three outstanding and "essential" symptoms of peptic ulcer: Pain, vomiting, and hemorrhage.

Pain in most ulcer patients tends to have remissions and relapses over months or years. It may occur practically at the same time each day or night. Generally speaking, the nearer the ulcer is to the stomach the sooner after the ingestion of food will pain appear and conversely the farther the ulcer is from the cardia the later it appears. Thus one, two or even three to five hours after meals, day after day, it comes regularly. The pain is slight to moderate to so severe that opiates are required. It is most often epigastric and more often than not in the middle between the umbilicus and the ensiform cartilage. Whenever the pain is referred from the ulcer to other areas such as, the back, the hypochondria, the liver area, or the lower front chest, the implication is that the ulcer is of the penetrating type—emphasized by Rivers[2]. This is especially true with a slow perforation and adhesion of the base to an adjacent viscus. Overlooking this may cause much unnecessary confusion in the effort to evaluate the pain. The characteristic relief that follows taking food and alkalies is almost axiomatic. However, such relief usually is less prompt and less complete in gastric ulcers than in those distal to the pylorus. Nevertheless, the pain, food (or alkaki) ease sequence of ulcer is the best clue to correct diagnosis. Pain is not always described as such but perhaps as burning, fullness, weight, gas, etc. Oftentimes a careful investigation of such symptoms establishes them definitely as painful phenomena.

Vomiting, usually preceded by nausea, is the second most frequent symptom of peptic ulcer —occurring in 30 to 40 per cent of all cases. This may result either from pyloric spasm or cicatrial contraction incident to the healing of chronic ulcers. In either event vomiting is more likely when the lesion is close to the pyloric ring. In functional obstruction vomiting tends to reappear at similar periods on successive days, usually three or more hours after eating, when the gastric acidity is highest and the motility of the stomach greatest. Relief of pain, often partial, at times complete, follows emesis of a large quantity of highly acid gastric contents. This symptom at first may be present only at varying and irregular intervals, but if the ulcer is untreated the intervals tend to shorten so that in time vomiting occurs from one to several times per day. Under such circumstances the general health suffers with much loss of weight. Organic pyloric obstruction develops slowly, as a rule, allowing for compensatory hypertrophy of the gastric musculature which may be so efficient as to prevent vomiting until the pyloric closure is virtually complete; then the patient may eject almost everything taken into his stomach, and such cases frequently come under observation greatly dehydrated, markedly emaciated, in a state of aklalosis from loss of acids, with low blood chlorides, high blood urea, and with symptomatic polycythemia from blood concentration. Frequently it is well nigh impossible in a case seen for the first time to be certain whether the pyloric obstruction is functional or structural. The functional type is the far more common and in the majority of instances can be overcome by appropriate medical therapy.

In the order of frequency of the peptic ulcer triad of symptoms, the last is hemorrhage. While most ulcers ooze small amounts of blood at intervals, only about 25 per cent produce massive hematemesis or copious tarry stools. Approximately nine of 10 such hemorrhages result from peptic ulcer, (gastric or duodenal)

vigorously emphasizing the significance of this symptom. If loss of blood is considerable a state of acute post-hemorrhagic shock is produced. It is extremely rare that the first hemorrhage from an ulcer is fatal—occurring but once among my patients; opportunity for transfusions usually is afforded.

Perforation is a complication of an ulcer rather than a symptom; but at times patients are not sick enough to consult physicians prior to this serious and dramatic episode. Acute onset, agonizing pain, board-like rigidity of the abdomen (particularly of its upper half), absence of peristalsis, rapid pulse and perhaps a state of shock, speak loudly for perforation in the known ulcer patient, and suggest ulcer and perforation in the unknown group, most of whom had had digestive symptoms.

In addition to the three "essential" symptoms—pain, vomiting, and hemorrhage—gastric ulcer patients often present one or more "accessory" symptoms such as gas, belching, bloating, acid eructations, constipation, and pyrosis. In about one-fourth of all cases "indigestion" not typical of ulcer is the best that can be elicited; therefore, it is of paramount importance that every patient with symptoms of "chronic indigestion" should be given routine study including roentgenographic investigation.

The objective symptoms of uncomplicated ulcer are scant. Epigastric tenderness, with increase in muscle spasm, is usual. The nutritional status may be satisfactory unless considerable pyloric obstruction is present when bodily wasting and visible peristalsis from left to right across the upper half of the abdomen may be apparent.

In uncomplicated benign ulcer a modified Sippy treatment of rest frequent feedings of a bland diet and alkali to control acidity is the accepted therapy. Belladonna, sedatives (barbiturates, bromides, etc.), transduodenal feedings, gastric lavage, animal or vegetable mucin, and psychotherapy are additional weapons. For surgical treatment, the indications usually are perforation, repeated hemorrhages, pyloric obstruction not amenable to medical measures, marked perigastric or periduodenal adhesions; suspicion of a malignant change and failure to obtain satisfactory results from careful medical treatment. A well regulated life, ulcer diet, generally alkalies, and periodic vacations must be prescribed in most cases to be followed throughout life since otherwise recurrences are the rule. Once an ulcer, always an ulcer is probably not far from the truth. We fortunately are able to care reasonably well for the local lesion, but unfortunately cannot completely alter an individual's constitutional make-up, nor revamp his vegetative nervous system.

All that has been said is intended to apply largely to benign ulcers. Malignant metamorphosis of duodenal ulcer is so infrequent that it is a medical oddity.

Proximal to the pylorus, however, carcinomatous change in an ulcer is common. To distinguish a malignant gastric ulcer from its non-malignant prototype all too frequently is impossible. In 1909 Wilson and MacCarthy[3] reported 71 per cent of resected carcinomata of the stomach associated with definite ulcers, and in 1910 MacCarthy[4] stated that 68 per cent of resected ulcers (including ulcers of the duodenum) were associated with carcinoma. Most clinicians believe that benign gastric ulcers undergo malignant transformation, but the view is widely held that this change occurs only in five to 10 per cent of the cases; in 1920 MacCarthy[5] stated that it is impossible to give the per cent. More recently Pollard and Bloomfield[6] and Hurst[7] have claimed that the stomach with chronic gastritis and anacidity is the one most likely to develop carcinoma. Conversely, it is usually accepted that hyperacidity, an unstable nervous system, and other poorly defined conditions, favor ulcer development.

There are no absolutely positive criteria to enable one to say definitely whether a certain lesion is simple or malignant. He has certain generalities on which to project a therapeutic course. In the first place, the size of the ulcer is relevant, since an ulcer more than two cm. in diameter is more often cancerous than benign; but not all malignant ulcers have so large a diameter. Then too some large gastric ulcers are benign. Anacidity or hypoacidity favors the malignant nature of a process, and normal or high gastric acid speak for benign ulcer. In ulcer cases whose gastric acids have been repeatedly titrated over long periods a falling acidity suggests carcinomatous change. intermittently positive benzidine reactions in the stools suggest simple ulcer, whereas car-

cinomata tend to ooze blood continuously. Roughly speaking, a long history with intermittent symptoms over a period of years usually indicates a benign ulcer, while a short history with rapid progress of symptoms points to cancer, and yet such evidence may be misleading. The age of the patient is of importance; those under 40 most often harbor benign ulcers, while those above that age show carcinoma with much greater frequency. Finally, the response to careful medical management is helpful. Here the physician should proceed cautiously. The fallacy of prolonging medical treatment beyond two to three weeks in the face of unfavorable progress is perfectly obvious. If the symptoms abate rapidly and the ulcer crater diminishes in size or disappears completely, the lesion is most likely benign. On the other hand, persistence or intensification of symptoms under proper treatment definitely indicates cancer; and yet not all benign ulcers yield to medical treatment.

Perhaps the most valuable single part of the differential diagnosis between benign and malignant ulcer is given by the roentgenologist who often is the court of last appeal—at least preoperatively. However, neither the roentgenologist, internist, nor surgeon can definitely say that a given ulcer is one or the other. Even the pathologist often requires histological preparations before he is able to hand down a verdict which is always correct.

In conclusion: When gastric ulcer causes symptoms it is best to get all available facts relative thereto, carefully sift the evidence and utilize common sense in arriving at a conclusion. In most clinics a considerably larger number of gastric than of duodenal ulcers are treated surgically for the single reason that the clinical differentiation between benign and cancerous ulcers of the stomach is so difficult. The malignant ulcer is the undisputed property of the surgeon; but the internist should receive the patient while there is reasonable expectation that his efforts may prove beneficial.

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GASTRO - INTESTINAL SYMPTOMS IN PERNICIOUS ANEMIA

G. M. BRANDAU, M. D.
Monahans, Texas

It is well known that in pernicious anemia symptoms referable to the alimentary tract are often the first signposts of trouble; in the fully developed disease disturbances of the stomach or bowels may be most urgent indications for therapy; and finally during impending dissolution gastro-intestinal symptoms may overshadow evidence of the blood dyscrasia and lead an unwary diagnostician into error. Hence it does not seem amiss to call attention to the necessity of maintaining a constant lookout for the Addison-Biermer type of anemia in those cases of alimentary disorder whose origin is obscure or whose course is not typically influenced by the employment of standard remedies.

Beside sore tongue and the almost constant achlorhydria there may be stomatitis, anorexia, nausea, vomiting, abdominal distress, flatulency, heartburn and eructations of gas or clear fluid. Diarrhea is present in about 50 per cent of cases, sometimes accompanied by pain and tenesmus. Constipation is complained of in some cases and may alternate with diarrhea. Gastro-intestinal crises or paroxysms of severe pain in the abdomen may occur occasionally simulating acute surgical conditions of the abdomen. It should be remembered that gall-bladder disease is not an infrequent accompaniment of pernicious anemia. Bleeding from piles or from the rectal mucosa may supervene and the blood loss is at times sufficient to alter certain characteristic features of the blood findings. In approximately 30 per cent of cases the chief complaint at onset is of one or more of these symptoms.

In order to illustrate the timeliness of a consideration of the subject I report briefly sev-

eral cases of pernicious anemia in which, on account of outstanding gastro-intestinal symptoms, incorrect diagnoses were made resulting in each instance in undue prolongation of the patient's suffering and disability.

CASE No. 1: Mrs. A. L. was sent in from the country with a diagnosis of "colitis." A similar attack characterized by intractable diarrhea had occurred a year previously and had persisted for several weeks despite vigorous treatment. Since then the patient's health gradually declined with flurries of diarrhea. The present acute symptoms began 10 days ago and although the usual remedies for diarrhea had been given, the patient continued to have eight to 10 stools a day with severe abdominal distress, was constantly nauseated, and for the past three days had vomited all food ingested. She was well nourished but appeared critically ill, showing a marked pallor with a muddy yellow discoloration of skin and sclerae. The tongue was glazed and there was a history of sore mouth which had recurred at irregular intervals. Proctoscopic and stool examinations were negative. In two days the nausea, vomiting, pain and diarrhea were relieved and the case was well advanced into an induced remission.

CASE NO. 2: A Mexican youth, 18, was seen at Jefferson Davis Hospital on the service of Dr. B. F. Smith, to whom the credit for making the correct diagnosis is due. This patient already had been in the hospital over a month under treatment for "peptic ulcer." Blood studies were not conclusive; epigastric pain was the outstanding symptom. Under a modified Sippy regime he had shown no improvement. His appearance as well as the erythrocyte count denoted a moderately severe anemia. Dr. Smith first saw him at this time and as there was no history of hemorrhage to account for the anemia, questioned the diagnosis of peptic ulcer. Further blood studies tended to strengthen a provisional diagnosis of pernicious anemia and response to liver therapy fully confirmed it. Four gastro-intestinal series were made in this case with the following respective diagnoses: Duodenal ulcer; negative; duodenitis and subacute appendicitis; appearance suggests acute pancreatitis.

CASE NO. 3: White female, 54, had been in failing health for two years and had been seriously ill for the past three months with anorexia, nausea, vomiting and diarrhea. She had lost 50 pounds in weight, become weak, fainted several times and was now confined to bed. She complained of paresthesias of the hands and feet and gave a history of sore tongue. Despite loss of weight she was still well nourished. She was very pale and the skin showed a lemon yellow tinge. Prostration was extreme. The tongue had a glazed appearance. A diagnosis of gastric carcinoma had been made elsewhere and death within a week forecast. History and physical examination suggested pernicious anemia and a hemanalysis by Dr. Martha Wood substantiated the diagnosis. On account of the urgency of the symptoms blood transfusion was advised but a suitable donor was not immediately available, so liver extract was given intra-muscularly and intravenously. The response was spectacular. Distinct improvement could be noted on the second day and continued steadily thereafter. Within a week the patient was asking permission to get up and in three weeks was able to walk about the room without feeling faintness or palpitation. Recovery was uneventful although paresthesia of hands and feet failed to yield to intensive liver-therapy.

CASE NO. 4: Male, white. 51, was admitted to Jefferson Davis Hospital June 19th, 1934, for "diagnosis." He had been treated in the outpatient clinic at Jefferson Davis Hospital for 18 months. When he first reported to the clinic he stated that he had been told he had ulcers of the stomach. Chief complaint was burning in stomach. X-ray of the stomach at that time did not show an ulcer but he was given the Sippy treatment. Two months later he complained of diarrhea; burning in the epigastrium continued and he was given the Sippy therapy. A month later he reappeared complaining of sore mouth and diarrhea. There was no skin eruption but pellagra was suspected and anti-pellagra treatment was instituted. Four months later there was burning in the epigastrium, alternating constipation and diarrhea, weakness, and loss of weight. The tentative diagnosis was carcinoma. About seven months after this carcinoma was still suspected and an exploratory laparotomy suggested which the patient declined to consider. Two months later he returned complaining of indi-

gestion and sore mouth. A month after this there was pain in the abdomen, sore mouth, and nausea and further loss of weight. For the first time the notes record anemia. About two weeks after this he was admitted to my service in the hospital. When seen on the ward he presented the typical picture of pernicious anemia. The erythrocyte count was 950,000. He responded well to liver therapy and was discharged after six weeks to the out-patient clinic, feeling greatly improved and with a red cell count of 2,500,000.

COMMENT: Of these four cases of pernicious anemia, the first had been treated at intervals for a year with a diagnosis of colitis, type unspecified; the second had been treated within the hospital for over a month as a case of peptic ulcer, with various X-ray diagnoses; the third had been regarded as a victim of gastric carcinoma until almost **in extremis**; and the fourth had been treated for 18 months, for stomach ulcer, pellagra, and carcinoma.

CONCLUSIONS: Gastro-intestinal symptoms occur in a large percentage of cases of pernicious anemia and sometimes dominate the clinical picture.

Such symptoms are ordinarily resistant to symptomatic treatment; but spontaneous remissions may occur.

The specific treatment for pernicious anemia affords the best hope for prompt relief of the gastro-intestinal symptoms.

In obscure alimentary disorders blood studies should routinely be made to exclude pernicious anemia and the other blood dyscrasias.

QUININE, INTRAVENOUSLY, IN THE TREATMENT OF PNEUMONIA

ORVILLE HARRY BROWN, M. D.
(Phoenix Clinic)
Phoenix, Arizona

The treatment of pneumonia with intravenous injections of quinine, is predicated upon: The high specific toxicity of quinine for pneumococci; the excellent results in the treatment of pneumonia and other respiratory tract infections with quinine, orally, rectally, or intramuscularly administered, reported by Austin Flint, Jacobi, Da Costa, Solomon Solis-Cohen, Galbraith, Kolmer. Meyer Solis-Cohen, myself and others in America and by numerous physicians in Europe; a small per cent of pneumococci submitted to the effects of quinine are more resistant to it than are most of the individuals of the culture and ready to start luxuriant growth as soon as removed from the influence of the quinine; in treatment of pneumonia, if the quinine is discontinued within 24 hours after the temperature is normal a considerable per cent of the cases relapse whereas in those in whom the drug is continued for several days after the temperature is normal, relapses are infrequent if at all; injecting quinine into the veins seems to assure its contacting the greatest number of pneumococci in the highest possible concentration; in a small group of pneumonia patients quinine by mouth is relatively ineffective, even though large doses are administered, and in a relatively few of the cases in whom quinine has been found ineffective by mouth, it has produced excellent results by vein.

I have used quinine in the treatment of pneumonia for nearly 30 years, with an almost negligible mortality rate. I have had deaths from pneumonia in the much weakened, in the very aged, in infants, and in alcoholics, and I recall one death in a morphine addict; it was not possible to know whether pneumococci were the organisms causing these pneumonias or not. I can recall no death of a typical pneumococcic pneumonia in any other group, except during the influenza epidemic of 1918-1919 when the idea prevailed that an unknown organism was the cause of influenza and that pneumococci and other common bacteria were mild secondary invaders; therefore, I used quinine in treating influenza pneumonia, if at all, with little enthusiasm—except in one case. A robust young woman physician had extensive double pneumonia with fever around 105° for days and profound delirium. To Dr. A. H. Williams, associated with me in treating her, and to me, she seemed desperately hopelessly ill. She was then given 105 grains of quinine, intramusculary in 15 grain doses at four to six hour intervals. This large

amount of quinine given in the relatively short space of time caused seemingly a miraculous cure, but both deafness and blindness. The deafness and blindness soon disappeared. It perhaps means nothing to say that I saw no other patient so desperately ill with the 1918-1919 influenza-pneumonia who recovered. I am fully aware that pneumonia patients make miraculous cures without quinine.

I acknowledge weakness in not having a long array of statistics with proper controls to prove the efficacy of the quinine treatment; however, I plead that my test tube culture experiments are so striking and should be so convincing as to excuse my not causing my pneumonia patients to take the greater chance of death through not having the quinine treatment.

The experiments which prove that quinine is specifically toxic for pneumococci were done as follows: Broth and agar agar media containing blood serum and hemoglobin, on which pneumococci grew luxuriantly, were used (the media were made under the guidance of Dr. Downey L. Harris, then pathologist and bacteriologist for the St. Louis City Hospital); one group of tubes contained the broth with 0.1 per cent quinine; a broth culture of pneumococci was shaken and from this one or two plain broth tubes and one or two quinine broth tubes were inoculated; they were shaken and from each a melted agar tube was inoculated and promptly poured into a petri dish. At one, two, three, and perhaps four hours plates again were made. All plates were incubated for 24 hours and then examined for the number of colonies. Sixty-seven different families of pneumococci were experimented with; 21 cultures were supplied me by Dr. E. C. Rosenow then of Chicago; the other 46 were isolated from cases with various types of pneumococcic disease. Many hundred experiments were run —many on each family of pneumococci. The results were extremely striking and consistent. Numerous other types of bacteria were used as controls; none of them ever had their growth deterred the least by quinine.

Seventeen average protocols are presented:

Inst. Plates	One Hour Plates	3 Hour Plates
	April 28, 1911	Sparks
400	2,000	5,000
300	200	0
	May 4, 1911	Hei.
2,000	100,000	100,000
2,000	500	2
2,000	100,000	100,000
2,000	500	4
	May 4, 1911	Seel
10,000	30,000	100,000
10,000	2,000	18
10,000	30,000	100,000
10,000	2,000	60
	May 15, 1911	Connors
10,000	10,000	50,000
10,000	0	0
10,000	10,000	50,000
10,000	1	0
	May 19, 1911	Hamm.
5,000	10,000	50,000
5,000	2,000	500
5,000	10,000	50,000
5,000	2,000	500
	May 19, 1911	Easly
5,000	10,000	50,000
5,000	2,000	500
5,000	10,000	50,000
5,000	2,000	500
	May 26, 1911	Mark
10,000	30,000	50,000
10,000	2,000	200
10,000	30,000	50,000
10,000	2,000	200
	June 1, 1911, Conner. Media—5	
2,000	5,000	10,000
2,000	50	0
2,000	5,000	10,000
3,000	200	0
	June 9, 1911, Connors. Media—1.1	
2,000	5,000	10,000
2,000	1,000	0
2,000	5,000	10,000
3,000	10	0
	June 2, 1911 No. 311, Rosenow, Media .5	
200	600	3,000
200	200	200
	June 2, 1911 No. 79, Rosenow	
200	4,000	10,000
200	200	10
	June 27, 1911 No. 549 Rosenow	
500	8,000	10,000
500	2,500	2,500
	July 1, 1911 No. 566	
3,000	5,000	0
3,000	5,000	0
	July 1, 1911 No. 79	
2,000	3,000	1,000
2,000	5,000	0
	July 1, 1911 No. 594	
5,000	15,000	0
5,000	2,000	0
	July 29, 1911 No. 509	
10,000	8,000	30,000
10,000	5,000	3,000
	July 20, 1911 No. 546	
5,000	10,000	50,000
5,000	2,500	1,000

In the protocols observe that: The figures in the first column under the words "Inst. Plates" (the plates made at the instant the tubes were inoculated) are about the same in each protocol showing that the two groups of tubes were

inoculated equally. In columns two and three, there are striking variations showing marked diminution of pneumoccoci in all tubes containing quinine especially when contrasted with the growth in those without quinine; in protocols four and five, is shown that the toxicity of quinine is greater for certain families of pneumococci than for others—extremely toxic in four and much less in five; even in the three hour plates of experiments four, five, six, seven, 10, 12, 16 and 17 there are many viable pneumococci ready to start rapid growth and reproduction as soon as removed from the inhibiting influence of the quinine, proving that individual pneumococci may be relatively resistant to quinine; and yet even in the tubes from which these organisms had been taken there was great destruction of pneumococci and certainly marked inhibition of growth of those not killed; experiments four, eight, and nine were with one family of pneumococci; in nine the organisms were seven days older than those in eight and 24 days older than those in four, and those in eight were 16 days older than those in four, showing that the pneumococci fresh from a patient are easier to kill with quinine than after they have been long in test tubes; for a time the organisms of the Rosenow cultures, at least is the one hour plates, show striking resistance to quinine and these cultures had been grown for many months only on culture media; in experiment 10 the fourth one hour plate had 10 organisms whereas the second plate had 1,000 presumably because the content of one wire loop was lost between the broth and the melted agar.

One must be impressed with the striking consistency of the results and of the marked toxicity of quinine for pneumococci; with nearly every culture, however, there are individual pneumococci with relatively high resistance to quinine.

Reasoning from test tube to patient, certain patients with pneumococcic infections—lobar pneumonia, bronchial pneumonia, bronchitis, bronchiectasis, tuberculosis with pneumococcic complications, colds—would be expected to have marked hinderance and lessening of the pathologic processes if relatively large doses of quinine be given them by mouth or by any other avenue. Other patients would be expected to respond slowly and stubbornly and sometimes not at all unless exceptionally high concentrations of the quinine were made to reach the organisms and retained there a sufficient length of time. Clinical results conform with striking exactness to the expected from a study of the test tube and plate protocols.

As colds are precursors of pneumonia, it is thoroughly logical to treat colds by administering liberal quantities of quinine and thus assume that many attacks of early or potential pneumonia are aborted. My clinical results confirm this theory.

Quinine in capsules or tablets is not always absorbed from the alimentary canal when administered by mouth. Patients find capsules and tablets entirely undissolved in their stools. I have had nearly no experience with administering quinine by rectum although one American author recommends that 50 grains be given at the earliest possible moment to a pneumonia patient by rectum; he claims excellent results.

Intramuscular injections of dihydrochloride of quinine have been highly satisfactory in treating pneumonia in my hands though painful and the quinine is said to sometimes cause necrosis at the site of injection; therefore I have adopted the intravenous route of administering the quinine in those cases who do not respond to it when given by mouth. The clinical results are just as striking as are the test tube experiments. Since clinical data can not be absolutely convincing without the controls expensive in lives as I am convinced they would be, I attach but two brief case histories and have no controls.

A young clergyman had a chill followed by fever and that afternoon he preached at a funeral service; though he nearly collapsed he concluded his task and on reaching home went to bed under the kindly ministrations of one of his well meaning lay parishioners who believed that the only treatment for pneumonia was good nursing. Pneumonia could not be fouund with a stethoscope until four days later; with the temperature around 104 and a mild delirium at times, she became alarmed and I was called after about 48 hours of his illness had passed. The conviction was that he must have pneumonia though proof of it could not be found; capsules containing five grains of quinine and one-quarter grain codein each were prescribed one an hour for four doses, and then one every four hours for another 48

hours or more with no apparent effect. The pneumonic process had continued, for at this time the findings in the lungs were clear-cut and positive for pneumonia; then he was given 10 grains of quinine by vein, 12 hours later a second and again 12 hours later a third injection. An x-ray at that time proved that he had a right upper lobe consolidation; his leucocytes numbered 17,850, 94 per cent of them being polymorphonuclears; the sputum contained both streptococci and pneumococci; a consultant's notation was. "A very sick man." Following the third injection of quinine the temperature fell from 104 to 101, but rose that evening to 102.6; then it was that his fourth injection was given; the next morning his temperature was 98.6, pulse 84, and respiration 20; the pulse was down to 64 by noon and 72 throughout the afternoon; from this on he had no more fever; he continued violently delerious however, and as it was feared that the quinine might be partially responsible for the delirium, no more quinine was given—although ordinarily I would have felt it necessary to give him quinine by mouth for several days; a spinal puncture was done on the second feverless day; promptly after this there was marked improvement of his mental state and a rapid return to normal status; the stethoscopic findings of abnormal lung condition rapidly diminished and the lung soon seemed entirely normal. He had nearly no cough and no sputum.

Another patient with a severe cold failed to respond to the quinine by mouth and as it was found that the capsules were being passed by rectum undissolved, three intravenous injections of 10 grains of quinine each were given him with no further fever or evidence of cold except that he required a few days to recover his strength and desire for work.

Conclusions: Quinine (combined with codeine) seems to be worthy of trial in every cold whether pneumonia has developed or not; if there is no improvement after the administration of large doses by mouth, the intravenous administration may be used—likely with good results. Especially should the quinine be used in the event of pneumonia and persisted in if good results are not obtained unless the pneumonia is not due to pneumococci.

The experiments which I did in the test tube and plates should be repeated by research workers who have the facilities; in addition animal experiments should be done in which animals are injected with pneumococci and then given quinine; it would also be interesting to know how each of the various types of pneumococci behave under the influence of quinine.

I believe firmly that quinine should have universal trial in colds and in pneumonias.

REPAIR OF PELVIC FLOOR

JAMES S. MASSON, M. D.
Division of Surgery, The Mayo Clinic,
Rochester, Minnesota

(Read before the meeting of the Southwestern Medical Association, El Paso, Texas, November 21 to 23, 1935.)

Injuries to the structure of the pelvic floor are caused, largely, by stretching or tearing in parturition. Slight lacerations do not require treatment, but lacerations beneath the skin or mucous membrane should be repaired. A most distressing complication of labor is complete laceration of the perineum, with loss of gas and fecal control. Less extensive tears involving the levator ani muscles and the various layers of the pelvic fascia often cause considerable invalidism, especially if, displacements of pelvic organs develop or, normal function of bladder or intestine is interfered with.

There are now fewer extensive lacerations of the perineum than formerly, but even with the best of care there always is stretching or tearing of soft tissue in the delivery of primiparas and frequently in the delivery of multiparas. Lacerations are likely in elderly primiparas, or with any obstetric dystocia. They frequently occur with improper use of instruments and from too rapid delivery from any cause. If satisfactory repair is not done immediately, the tendency is for gynecologic hernia to develop from imperfect resistance to intra-abdominal pressure. The longer the delay in repairing the torn tissues and the greater the intra-abdominal pressure as the result of heavy work, coughing, sneezing, or constipation, the greater the tendency for rectocele, cystocele, and prolapse to develop.

Perineal lacerations are generally divided into three degrees. I like to divide them into four

degrees as I do so many other surgical conditions. A first degree tear involves only a small amount of skin or mucous membrane and superficial muscles and does not require suturing. A second degree is slightly more, involving some of the fascial planes and extends slightly into the levator ani muscle. A third degree is an extensive rupture of the levator muscles and perineal tissue right down to and exposing the anal sphincter. A fourth degree tear means complete division of all the perineal tissues, with severence of the anal sphincter and loss of rectal control. Any classification, however, is unsatisfactory, since in many cases there is only slight evidence of external tearing while muscles are extensively injured. The true condition may not be recognized at once; but when the edema subsides and sufficient time has elapsed for muscle tone to return, it will be noted that the vagina, instead of a closed canal, is open and allows air to enter. This often embarrasses the patient as the air frequently is expelled with considerable noise. This is the result of injury to the levator ani muscles, which normally hold the posterior wall of the vaginal canal in apposition to the anterior. With increase in intra-abdominal pressure, the tendency is for the levator ani muscles to contract and to give added support, which keeps the pelvic organs in normal relation. With this support lacking, it is only a question of time until the anterior rectal wall bulges the posterior vaginal wall, making a rectocele; in many cases, even without a tearing of the utero-pubic fascia, the tendency is for the uterus to descend as relaxation of the anterior vaginal wall occurs, and for a cystocele to develop. Patients with these changes marked may complain of dragging pain in the pelvis—worse when on their feet—backache, chronic nervous exhaustion, irritable bladder and intestine, constipaiton, hemorrhoids, and painful defecation. It may be possible to empty the colon without making pressure on the posterior vaginal wall to hold back the rectum.

The extent of the injury is readily ascertained by inspection. It will be noted that the introitus is gaping and extends back beyond its normal limits. The anus is displaced slightly backward. On vaginal examination with two fingers, there is little or no muscular resistance to downward and forward pressure; the strong levator muscles, which normally can be felt just inside the outlet, and which give strong support posteriorly, seem to be more or less separated from the canal and to run parallel to the vaginal walls; the vagina lies in about the same axis as the anal canal, while normally it should be almost at right angles to it. By pinching the tissues with the index finger in the vagina, and the thumb close to

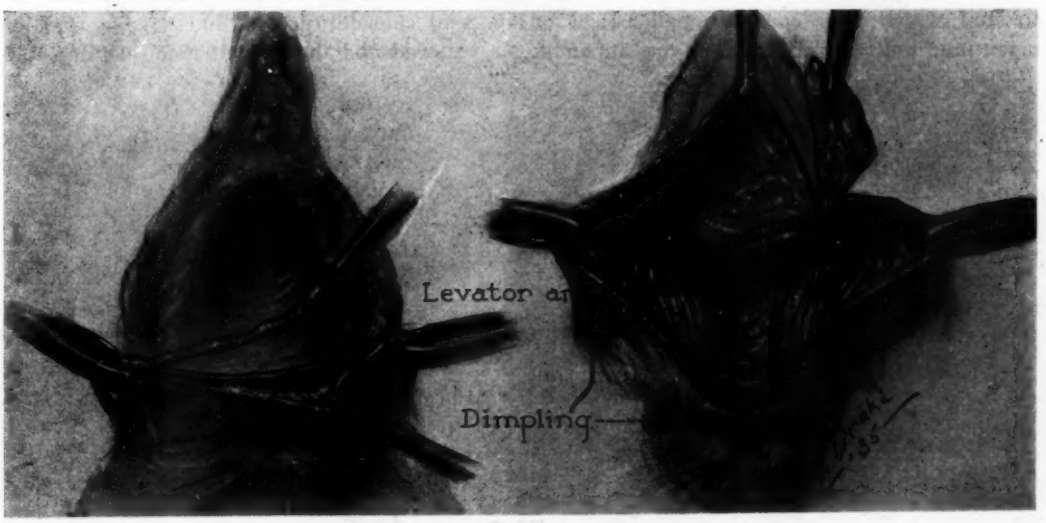

FIG. 1

Fig. 1. Left, opening the perineum; right, vaginal flap elevated, levator muscle mobilized, and sutures inserted; dimpling marks laceration of anal sphincter.

the anal margin, absence of the normal perineal body and the muscles lateral to it will be very noticeable in lacerations of the second and third degree. In complete laceration of the perineum, especially if the patient strains, the red rectal mucosa will be readily visible. The anterior ends of the torn sphincter, as a rule, in thin individuals are indicated by dimples on each side of the anal orifice.

The extent of the injury can always be better obtained by examining the patient while standing, and increasing intra-abdominal pressure. If an examination is made comparatively soon after injury, it may be difficult to ascertain the extent of the damage, especially if the patient has been in bed most of the intervening time. It is frequently advisable to examine under caudal or general anesthesia for complete relaxation.

Although the uterus gets support from suspensory ligaments, the pelvic floor is the main factor in keeping it in normal position. Therefore, an injury to the pelvic fascia and the pubococcygeus muscle, especially to the levator ani segment of it, will predispose to uterine prolapse and procidentia.

Besides the prolapse of the pelvic organs through the vaginal canal, a true vaginal hernia or enterocele is occasionally encountered and may be mistaken for a high rectocele. In these cases there are true hernial sacs of peritoneum which may contain small bowel or omentum, more rarely sigmoid or appendix epiploica. In the great majority of cases the hernias are posterior to the uteri between rectum and vagina, but may be between base of bladder and vaginal wall.

Lacerations of the pelvic floor seldom endanger life, but cause invalidism and inconvenience.

Unless the patient is in a state of shock following delivery, it is advisable immediately to repair all lacerations; at that time an anatomic type of repair is possible, and in spite of trauma, edema, and lochia, primary union is expected.

When primary repair has not been accomplished, and rectocele, cystocele or uterine prolapse has deve'oped, temporary help can be obtained by a well-fitting pessary, just as a truss may be worn for hernia; such treatment is not curative.

The only satisfactory treatment for neglected perineal lacerations is surgical. To cure a rectocele and reduce the size of the vaginal outlet, posterior colporrhaphy is necessary. The levator ani muscles, with their enclosing fascia, should be mobilized and brought together in the median line with chromic catgut, to hold the rectum back; a new perineal body should be constructed, thereby reducing the size of the vaginal outlet. This operation does not restore the tissue to the normal; neither do operations for hernias elsewhere. The important consideration is that normal function is restored and the patient made comfortable.

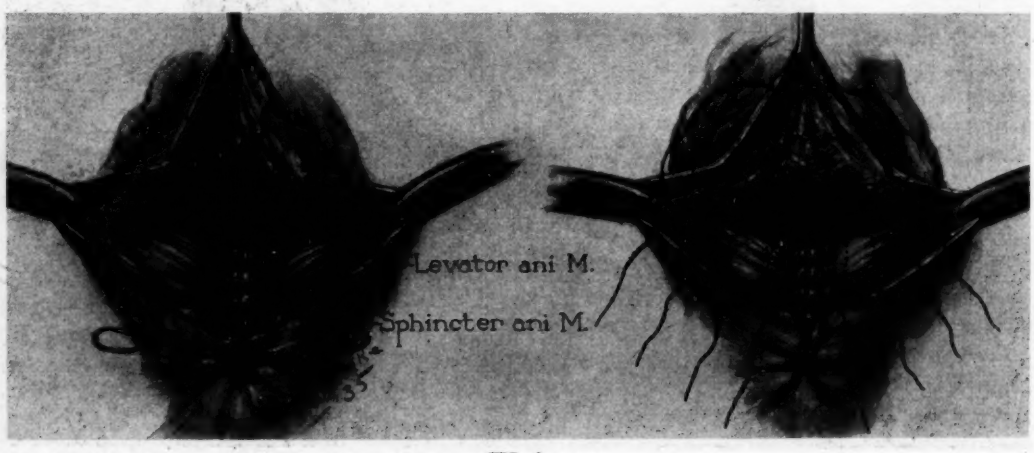

FIG. 2

Fig. 2. Left, approximation of levator muscles, and sutures that get a secure bite in the sphincter inserted; right, sutures in sphincter tied, series of crown sutures building up the perineal body and approximating the vaginal flap inserted.

When only a cystocele is present, the mucous membrane of the anterior vaginal wall is partially denuded; the bladder is advanced on the uterine cervix; the uteropubic fascia is brought in from either side by interrupted catgut sutures; and the vaginal mucous membrane is closed.

If a cystocele and uterine prolapse are both present, it may be necessary to do an interposition or a Fothergill operation, or a Mayo vaginal hysterectomy, and in some cases partial or complete colpectomy—depending on the condition present, the age of the patient, and her marital state.

With an enterocele or a true vaginal hernia, it is necessary to excise or invert the peritoneal sac and to do plastic closure of the hernial opening. This can be satisfactorily accomplished, as a rule, from below, but it may be advisable to open the abdomen and obliterate the cul-de-sac of Douglas.

Comment and Summary

Primary repair of lacerations of the pelvic floor is advisable in most cases. If the patient's condition is poor, or if assistance is necessary, delay of 12 to 24 hours will not militate against good union of the tissues provided aseptic precautions are taken. If primary repair is not made, or is not satisfactory, secondary operation should not be attempted until infection and edema have disappeared, and the patient's general condition is good. In case of complete laceration of the perineum, an entirely satisfactory result will be obtained only if the continuity of the anal sphincter is restored; but the condition will be much improved if the edges of the levator ani are united in front of the rectum.

Gynecologic hernias develop as the result of injuries to the pelvic floor. Anatomic repair is available when possible. In neglected cases, various procedures frequently are advisable to retain a cystocele: the uterus or the cardinal ligaments may be utilized, or the broad ligaments may be approximated after removal of the uterus. In all cases perineorrhaphy also is necessary.

Ventral fixation and shortening of uterine ligaments only, will not protect against uterine prolapse if a patient is much on her feet.

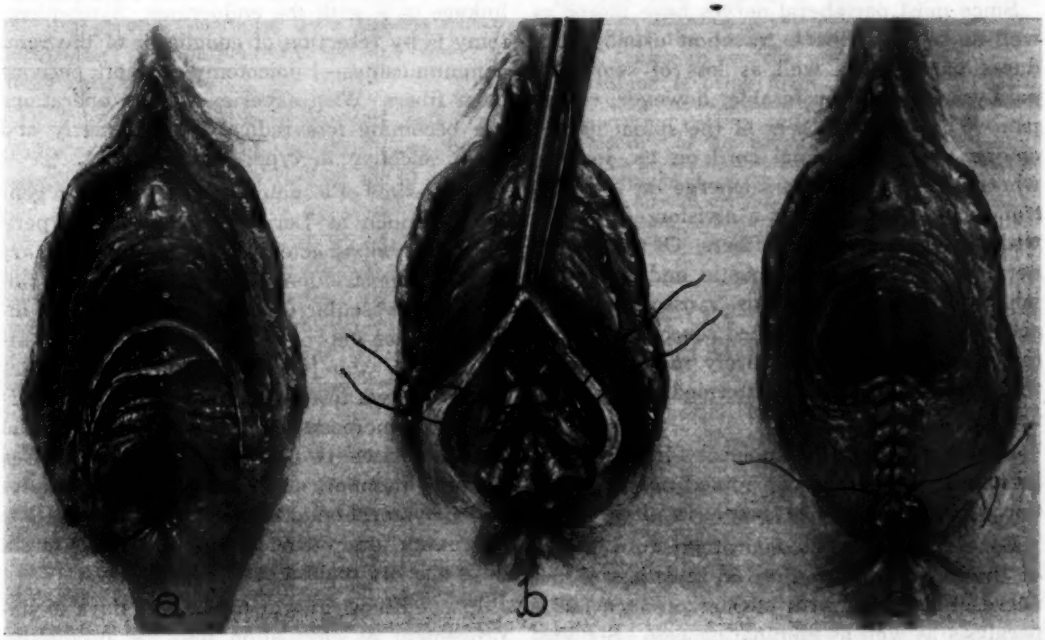

FIG. 3

Fig. 3. A satisfactory method of repair in a case in which a laceration extended up into the rectum; a, flap of mucous membrane is brought down from the vaginal surface to make a new anterior rectal wall and the rest of the repair is carried out as in figures 1 and 2.

In operating on elderly patients, with procidentia and huge cystoceles and rectoceles, colpocleisis or colpectomy is advisable.

A true vaginal hernia or enterocele, with a peritoneal sac, may be either posterior or anterior to the uterus. Repair generally can be effected vaginally, but a combined vaginal and abdominal operation may be advisable.

NERVE RESECTIONS

LESLIE R. KOBER
Phoenix, Arizona

(Presented at the Staff Meeting of St. Joseph's Hospital, December 9, 1935).

Nerve resections are to relieve pain, promote rest of a part, improve function, or to suppress reflex syndromes.

Pain from irremediable causes such as malignancy, advanced tuberculosis, and certain neuralgias making the victims' lives a veritable inferno, may be completely relieved by well-planned nerve resections.

Since most peripheral nerves have motor as well as sensory fibers, resection usually produces paralysis as well as loss of sensation; paralysis may be preferable, however, to the pain. The sensory fibers of the spinal nerves emerge from the spinal cord on its dorsum, whereas the motor fibers emerge on the ventral surface; this permits a division of sensory without disturbing motor fibers. Of the cranial nerves[1] the olfactory, acoustic and optic are wholly sensory; the vagus, glossopharyngeal and trigeminal are combined sensory and motor. The other six are purely motor—except the facial carries the intermediate sensory nerve.

Even though the superior laryngeal, a branch of the vagus, is a mixed nerve, resection produces good therapeutic results.

For facial neuralgia neurotomy or removal of the Gasserion-ganglion or injection of the nerve or ganglion with alcohol produce facial paralysis as well as eliminating pain. Sir Victor Horsley[2] in attempting to remove the Gasserion ganglion accidentally destroyed only sensory fibers relieving the pain without paralysis. Resection of the sensory portion of the dorsal root is now the accepted method of dealing surgically with trigeminal neuralgia, and with pain from malignancies of the face.

Intradural resection of the dorsal roots for pain from cancer in patients able to endure the operation is often recommendable; alcohol as suggested by Greenhill and Schmitz[3] may be injected instead of resection and is less of a drain upon the patient's vitality. Pelvic pain has been relieved by resection of the presacral nerve. Section of the lateral spinothalamic tract of the cord is a procedure especially for pain from intraspinal malignancy.

To facilitate lung rest, phrenectomy gives favorable clinical results even though sensory fibers to the diaphragm are resected. Phrenectomy is widely used.

Resections upon the sympathetic nervous system have been done—especially in recent years—with promising results. Since the sympathetics supply the blood vessels and viscera it would seem that in addition to controlling certain sensations resections might improve circulation to one or another part. While the concepts of the sympathetic system are largely theoretical there seems to be a close linkage of it with the endocrines. Sympathectomy is by resection of ganglia or of the rami communicantes—ramicotomy—or of perivascular fibers. With experience these operations are becoming less radical than formerly and more selective in type.

The results of a sympathetic resection in general is much as Leriche[4] described for periarterial sympathectomy. There is a primary vascular constriction of variable duration followed by vascular dilation. With vascular dilation comes improved function of the part affected by the resection—the temperature jumps up two to four degrees Centigrade, perspiration increases, pulses improve, arterial pressure rises two to four mm. Hg. and a greater number of peripheral erythrocytes and polymorphonuclear leucocytes result. The maximum improvements accrue in four to six days and are maintained 16 to 40 days.

In conditions in which 30 to 40 days of improvement of circulation may be productive of good results the operation is indicated. The good results are not always confined to the part supplied by the resected nerves but may be in a homologous limb or even general.

Along with the improved circulation and the good that goes with that may be loss of pain of angina pectoris, improvement of asthma, colitis, hypertnesion, etc., in properly selected cases, and operations.

Periarterial sympathectomy has helped certain painful phenomena such as ascending traumatic neuritis, painful amputation stumps, the causalgia of Weir-Mitchell due to trauma of an artery and nerve or to a muscular injury, vasomotor diseases such as Raynaud's disease, acrocyanosis, acroparesthesia. and acute or chronic unilateral traumatic edema arterial diseases such as aneurysm or thrombosis in chronic ulcer, due to trauma, burns, leprosy, callous formation following fracture, traumatic osteoporosis (Sudek's disease) or painful postinfective osteoporosis following rheumatism or gonorrhea, and certa n skin diseases.

Ramicotomy—ramisection or ganglionectomy —has been employed in spastic paralysis of Little's disease, Parkinsonian disease, and related conditions visceral syndromes such as angina pectoris[5], hypertension[7], bronchial asthma[8], tabetic crises, spastic colon, megacolon, and cardiospasm[4], and in painful syndromes of the extremities and vasomotor disturbances where periarterial sympathectomy proved not entirely satisfactory.

In 1922 surgeons were divided into two groups as to the effect of removing sympathetic ganglia, particularly the stellate or first thoracic ganglia which carries motor fibers from the heart. It had been shown on experimental animals that removal of the stellate ganglia acceleration of hearts on exertion did not occur and the heart seemed to contract superficially and without force. Clinically, in some cases ganglionectomy was succeeded very rapidly by death.

Many ganglionectomies performed since, both on man and dog, even both stellate ganglia removed and followed for years showed no cardiac complications clinically or with the electrocardiogram. Hence the early fears of impaired cardiac function were unfounded; the cardiac accidents likely were due to defective technic.

In general periarterial sympathectomy or ramictomy may be employed **judiciously—periarterial** sympathectomy for localized disturbances and ramicotomy for diffuse phenomena.

Summary: The general indications for nerve resection are:

A. In the peripheral cerebrospinal nerves: Relief of pain and promotion of local rest through local muscular paralysis;

B. In the sympathetic nerves: Relief of pain, promotion of improved function through circulatory modifications and suppression of certain reflex syndromes.

1. Sabotta and McMurrich: Atlas and Textbook of Human Anatomy.
2. Garrison: History of Medicine.
3. Greenhill, J. P. and Schmitz, H.: Intraspinal (subarachnoid) injection of alcohol, J.A.M.A. 105: 406-409, 1935.
4. Leriche, R.: Nelson's Looseleaf Surgery.
5. Bird, C. E.: Sympathectomy as a Preliminary to the Obliteration of Politeal Aneurysms. Surg. Gynec. and Obst. 60:926 May, 1935.
6. Coffey, W. B. and Brown, P. K.: The Surgical Treatment of Angina Pectoris, Arch. Int. Med. 31:200-220, 1923.
7. Cutler, E. C. and Fine, J.: Sympathectomy in Angina Pectoris, J.A.M.A. 86:1972-1979, 1926.
8. Levin, Gdal L. L.: The Treatment of Bronchial Asthma by Dorsal Sympathectomy, Ann. Surg. 102:161-170, 1935.

NEWS ITEMS

Dr. and Mrs. A. L. Gustetter have recently returned from a short trip to Los Angeles.

Dr. and Mrs. Charles S. Smith have returned to Nogales following a two weeks trip to Los Angeles, where the doctor attended the Mid-Winter Clinical Course in eye, ear, nose and throat.

Everything is being made ready by the Santa Cruz County Medical Society for the entertainment of the visiting doctors and their ladies at the annual meeting of the Arizona State Medical Association to be held in Nogales April 23, 24 and 25. Just remember all of the valuable prizes to be given away, the special excursion to Guaymas (Old Mexico) and other entertainment features too numerous to mention. We'll be expecting YOU and your LADY.

STUDIES ON THE NATURE OF PHAGOCYTOSIS

ZEBUD M. FLINN
Prescott, Ariz.

(Continued from January issue)

At the end of 24 hours there were always large numbers of leucocytes after intraperitoneal injections of bacteria, most of them actively motile. At this time clasmatocytes had begun to appear in considerable numbers. These were large cells varying in length from 20 to 30 micra, with oval nuclei and vacuolated cytoplasm. They contained few or no mitrochondria and no radial arrangements of

neural red. Monocytes did not appear until later and were most concentrated at the end of 72 hours when they composed about 60 per cent of the total cells, and about 90 per cent of the phagocyting mononuclears. They varied in size from a normal leucocyte to the medium sized clasmatocyte. It was formerly believed, quite generally, that the burden of the defense of the body against acute bacterial invasion rested with the polymorphonuclear leucocytes of the blood stream, and it is fairly well established that in the blood stream itself and, in the early stages, in serous cavities the most active phagocytosis is a polymorphonuclear process. However, there is much evidence that macrophages of the reticulo-endothelial system posses a definite and important function. Frequent observations have been made of phagocytosis of various microorganisms by mononuclear wandering and fixed tissue cells, particularly in the spleen, the alveoli and capillaries of the lungs and in the Kupfer cells of the liver, but we shall not consider these further as we are particularly concerned with the polymorphonuclear leucocytes of the blood stream in this study.

Chemotaxis.

The part played by the phagocytic cell in the defense of the body against bacteria and other foreign substances consists of two functionally different phases. The first is an active motion of the cells toward the point of attack, and their accumulation about the invading agent; the second consists in the act of ingestion itself. The motion of the leucocytes toward the invading substances indicates a sensibility on the part of the cell to change its environment, incited by the foreign agent, and since the stimuli most likely to reach the leucocytes and bring about this alteration in the direction of their movements are chemical in nature the phenomenon is known as "chemotaxis." Since the change of direction brought about in a moving cell by such influences may be such as either to attract or repel, the term "positive chemotaxis" is used to designate the former and the term "negative chemotaxis" for the latter. The stimuli which determine the motion of the cells are, of course, not necessarily chemical, and extensive studies have been made upon the effect of light in this connection. Although these investigations are of great biological importance they have little bearing upon the problems of tropism as relater to bacteria and leucocytes and cannot be considered here.

Studies on the factor determining the movement of bacteria and amebae toward some substances and away from others have been numerous, and have led to the formulation of many theories. That the motions of bacteria in suspension are, to a certain extent, determined by the electrical charge which they carry (in a neutral medium) has been touched upon already, but attempts upon the part of Zinsser and Young to determine whether the attraction of leucocytes toward bacteria might be due to the carrying of opposite electrical charge met with negative results.

The chemotaxis of leucocytes has been difficult to study, since conditions within the body are so complex and experiments upon living cells in vitro, even under conditions of the most careful technique, involve injury to the cells. At any rate, enough has been learned to indicate that these cells are subject to the phenomena of chemotaxis or tropism just as are independent unicellular forms, and that they may be attracted or repelled by a variety of organic and inorganic substances. Leber observed that dead bacteria exerted a positive chemotactic influence on leucocytes and later succeeded in extracting substances from various bacteria which possessed this property. It appears from these, and other investigations that the power of stimulating positive chemotaxis is a general property of bacterial proteins, equally apparent in bacterial extracts, dead bacteria and the living organisms. It is likely, therefore, that the attraction of leucocytes toward the point of bacterial invasion is, in part at least, due to the bacterial proteins. That this is not the whole story, however, is evident from the work of Massart and Bordet who showed that the products of tissue cell destruction possess similar positively chemotactic properties. This is true even of destroyed leucocytes. Thus, it appears that when an injury of tissue takes place, a stimulus which attracts leucocytes results, even when the injury is not accompanied by bacterial invasion. This explains the participation of leucocytes in reactions to injury, not of bacterial origin, for example the injection of insoluble inorganic substances.

We have seen that the action of leucocytes

in moving toward some substances and away from others is analagous to a similar phenomenon in unicellular life, and the explanations applied to the apparently purposeful acts of the amebae, such as the motion toward and the engulfment of food, have been applied to leucocytes as well. Many of the theories developed concerning the free living forms have been easily excluded in the leucocytes however, because of the environment in which their activities are developed. Thus, the interesting reactions of paramecia and other organisms to light have little bearing upon this subject, and the views based on the theories of orientation may be excluded on the ground of the symmetry of the normal leucocyte.

Although the phenomena of chemotaxis are most easily studied in extravascular inflammatory changes, there is, nevertheless, a regular and apparently purposeful attraction or repulsion of leucocytes in the circulating blood during infectious diseases (18). That infection of the body with many micro-organisms results in an increase in leucocytes, and that in others there is either no increase or even a decrease is generally known, yet the causes of leucocytosis in one case, and of leucopenia in the other are still, to a considerable degree, unclear.

While the leucocytic movement under chemotactic stimulus is not concerned to any extent in ordinary opsonic phenomena with bacteria, it has sometimes played a part in phagocytosis in vitro. Comandon (19) has shown that in the phagocytosis of starch granules by frogs' leucocytes in vitro the latter move in straight lines toward the granules and then ingest them, true chemotactic attraction thus being concerned. On the other hand, he found that there is no such attraction in the case of carbon particles, the ingestion of which is a physical phenomenon of capillary adhesion.

Leucocytosis.

It is not entirely clear whether leucocytosis signifies an active discharge of new leucocytes from the bone marrow or whether it means simply an altered distribution, in that the phagocytes accumulated in the lymphatic or other organs are attracted into the peripheral circulation. Studies of the bone marrow during infection, as well as the occasional appearance of myelocytes and other cells ordinarily found only in the bone marrow during health, would point toward participation of active bone marrow hyperplasia in increasing peripheral leucocytes. There is no good reason to doubt that a chemotactic stimulus exercised in the circulation should withdraw leucocytes from any place of accumulation to the circulation. Probably both processes take part.

When bacteria are injected into the circulation of an animal there is, at first, a moderate diminution of the leucocytes just as there is after the injection of bacteria or other substances into the peritoneum. This is soon followed, in some cases, by a rapid increase in which the polymorphonuclear neutrophiles preponderate. The extensive clinical studies of the white cells in infectious disease of human beings give us more material for reasoning along these lines than we have available from animal experiments. Infection with invasive bacteria such as pneumococci, streptococci, staphylococci, and others, is always accompanied by increase of leucocytes, while in typhoid fever, influenza and tuberculosis the leucocytes do not increase and even may be decreased. We cannot account for this in any way and dare not venture an opinion in the absence of both theoretical and practical data. That all bacteria contain substances which are positive in their chemotactic effects is easily demonstrated by injecting them into the peritoneum and observing the accumulation of leucocytes. A final explanation of these conditions is not possible at present, nor has an adequate explanation for the selective accumulation of lymphocytes and the absence of polynuclear cells about tuberculous foci been advanced. The absence of polynuclear cells may possibly be due to the insolubility of some of these bacilli, in consequence of which little or no leucocytosis-sitmulating substances are liberated.

In infections with Gram-positive cocci and with many organisms in which there is no question about the fact that protection is mainlv dependent upon phagocytosis, there is always a powerful leucocytosis, except in conditions of an overwhelming infection or at stages when the resistance of the body has been overcome. In diseases like typhoid fever and influenza where leucopenia is the rule it is possible that diminution of leucocytes result from toxic injury of the bone marrow and other hematopoetic organs. In these diseases it is also known that a considerable amount of

actual destruction by the sensitizer-alexin activity of the blood plasma occurs, in consequence of which endotoxic substances may be liberated. In typhoid fever where the slight primary leucocytosis is rapidly succeeded by leucopenia, with a relative monocytosis, the conditions are illustrative of this. Here, as in some other infections, we are dealing with a generalized infection by organisms easily subjected to the action of serum antibodies. The liberated cell constituents seem to exert a negative chemotaxis, and probably during the height of the disease give rise to the low leucocyte count observed. That this is likely seems to follow from the studies which have been made upon the nature of typhoid poisons, and from the observations of Gay and Claypole (20) that typhoid-immune rabbits react to the infection of typhoid bacilli with a rapid and powerful increase in the polymorphonuclear leucocytes, whereas similar injections into normal rabbits leads to leucopenia.

If the supposition regarding tuberculosis, made above, is correct it would follow that a sudden and considerable increase in polynuclear leucocytes in a case of tuberculosis would indicate a discharge of organisms into the circulation and a tendency toward generalization of the infection in this manner. However, (speculation is sometimes justified) it must not be forgotten that the problems of selective chemotaxis are too obscure to permit laying of much weight on any of these views.

Gay and Claypoles' work has not been universally confirmed, and McWilliams found no difference in the degree of leucocytosis between normal and immune animals in their response to the injection of bacteria, and later reported that the same degree of response followed in typhoid-immune animals when injected with B. coli as when typhoid bacilli were used. In part, this has been the experience of several other workers.

Zinsser and Tsen (21) found that when homologous Gram-negative bacilli are injected into immunized animals there seems to be a definitely higher leucocytosis in the immunized animals than in normal controls similarly treated. They reported, though, that their experiments did not give nearly as striking results as those recorded by Gay and Claypole.

It seems reasonably clear then, that animals react more energetically as far as their mobilization of leucocytes is concerned when reinjected than do normal animals treated with the same variety and quantity of bacteria.

When immune animals are treated with heterologous bacteria, that is, when prodigiosus bacilli or colon bacilli are injected into typhoid-immune animals, and vice versa, there seems to be no specific difference in response. In other words, the injection of colon bacilli into typhoid animals has shown no marked difference in leucocytic response from that observed when typhoid bacilli were injected into typhoid animals. The injection of leucocytic extracts does not arouse as vigorous a leucocytic response as does the injection of bacillary protein.

To summarize: Specific leucocytosis has not been demonstrated, but an animal immune to one organism will have a slight non-specific increase of resistance to other organisms.

MEDICAL ANNALS OF ARIZONA

By ORVILLE HARRY BROWN, M. D.
Phoenix, Arizona

CHAPTER II.

MEDICAL MEN OF ARIZONA DURING THE CALIFORNIA GOLD RUSH PERIOD AND THE FIRST PHYSICIAN TO ACTUALLY LOCATE IN ARIZONA.

Many who first settled in or visited Arizona in the early day—physicians as well as others—did so during the hectic days of the California gold rush. In that great migration were great numbers of doctors, lawyers, merchants and others who left their homes in old settled communities, to seek wealth or adventure, or both in the vast, unexplored stretches of western America.

As trail-blazers, Indian fighters and miners, the doctors proved themselves just as hardy, daring and courageous as any who crossed the deserts and mountains through dangerous Indian country to California's golden streams. Few of them lingered by the way while hurrying to the goal of their dreams; many, however, after reaching the gold fields, retraced their steps to their former homes or wandered elsewhere, disappointed, perhaps, over their luck or the hard living conditions in the rough mining camps of the west.

The ease with which fortunes were made in the newly discovered El Dorado had been spread far and wide, and few of the young and vigorous, regardless of station in life, were able to resist the call 'On to California," that was heard throughout the eastern states, following the discovery of gold on the Pacific Coast. The uprising was as if by magic; wherever, and as rapidly as the news spread men dropped their tasks and joined the long caravans heading toward the Golden State. They started from every section of the East and were soon pouring, by the hundreds, into California. It is safe to say that Marshall's accidental discovery of the precious metal, on January 24, 1848, influenced the fortunes of millions of individuals and put a new face on the affairs of the civilized world.

Dr. O. M. Wosencraft and others in New Orleans, Louisiana, formed a company in the winter of 1848-49 for the purpose of going overland to California. Coming by way of Brownsville, Texas, and the Rio Grande, the Wosencraft party went through what is now southern Arizona, then a part of the Republic of Mexico. They crossed the Maricopa plains near the big bend of the Gila, arriving at the Colorado River below the Gila; there they found a dilapidated rawhide boat which, after repairing, they used in ferrying the river.

At the time of Dr. Wosencraft's arrival at the Colorado Yuma Indians were preparing to make an attack upon a small party of whites. They had already taken possession of the horses and were about to dispatch the unfortunate travelers with their murderous clubs—favorite weapons among this tribe of savages. The white party consisted of four persons who were in advance of a larger party that was bringing a drove of mules from Tepic, Mexico, to the Almaden Mines, in Santa Clara County, California. The timely arrival of Dr. Wosencraft and his companions saved the lives of the four men.

After crossing the river the Wosencraft party continued to California, glad to leave behind them the country of the fierce Apaches and the treacherous Yumas.

Dr. Charles Wilkins Webber, Frontiersman, Physician, Theologist, and Journalist, born in Russellville, Kentucky, in 1819, came to the Southwest as a youth and joined the famous Texas Rangers, with which organization he saw much of the wild frontier life of that day. He afterward studied medicine and then turned to theology, but soon abandoned both professions and took up journalism, working on several widely known newspapers of the East. By nature he was restless, and in 1849 organized an expedition to the Colorado and Gila rivers for the purpose of exploring the mineral possibilities of that region. Upon his return from this journey he wrote a book entitled "The Gold Mines of the Gila." He was also the author of a number of other volumes dealing with western subjects and adventures. In 1855 Dr. Webber went to Central America and was killed in Nicaragua while a member of the filibustering party commanded by William Walker, famed as a filibusterer and adventurer.

The **Medical Companion of the Howard Family:** The next doctor—his name, unfortunately, not now known—to traverse the country that later became Arizona, was present at an event that is now a part of Arizona's early history. This incident is referred to in Bancroft's history of Arizona and New Mexico in the following words:

"The first of November, 1849, there arrived, at Yuma, a flat-boat which had made the voyage down the Gila from the Pima villages with Mr. Howard and family and two men—a doctor and a clergyman—on board. During this voyage a son was born to Mrs. Howard, perhaps the first child of American parents born in Arizona, and named, as Lieutenant Coutts tells us, GILA, from the fact that he was born on the river of that name.

The Howard craft was made in the east and was suitable for both land and water travel and, upon reaching Yuma Crossing, was purchased from the Howard famiy by Lieutenant Coutts who used it as a ferry across the Colorado for emigrants on their way to Caifornia. The Howard family and their traveling companions continued into California and, in 1884, Gila Howard, Arizonan, was living in Lake County, in that state.

Another doctor who was a California 49-er but left its mining camps to wander across northwestern Mexico, was **DR. ABEL B. LINCOLN,** whose name is now inseparably linked with the earliest history of Arizona—especially with that centering about the Colorado River in the vicinity of the site that later became

Fort Yuma. Early in the year 1850, Dr. Lincoln established a ferry with regular service on the Colorado River, just below its junction with the Gila on the former site of Lieutenant Coutts' Camp Calhoun. Most of the money for the establishment of this ferry was furnished by Mr. J. P. Brodie, an American resident of Hermosillo, Sonora, Mexico, who retained an interest in the enterprise. Dr. Lincoln and his associates constructed a stockade on the California side of the river, which was called FORT DEFIANCE and in which they established their headquarters.

After operating the ferry for a short time Dr. Lincoln took in, as a partner, John J. Glanton, of Texas, who, it is said. had been the head of a band of outlaws employed by the state governments of Sonora and Chihuahua, Mexico. to gather Apache scalps at 100 dollars for each brave, 50 for each woman and 25 for each child. The business seems to have been lucrative for Glanton and his former outfit. It is said that they did not stop at the acquisition of Apache scalps, but added to their hirsute collections those of friendly Pimas, Opatas and Papagoes. Upon the discovery of their treachery and duplicity by the Mexican authorities, the Apache hunters had to leave the country hurriedly, their departure being expedited by the knowledge that capture meant death.

John J. Glanton, history records, originally came from the state of Tennessee. For some years before coming West, he had been an inmate of the Tennessee penitentiary but through the intercession of influential friends who had known him in his younger years when he gave promise of becoming a useful man, he was released. He had been a member of the John A. Murrill band of outlaws, who infested the Lower Mississippi Valley in the 1830's and early 1840's, and for depredations committed while a member of that gang, he was sent to the penitentiary. He had chosen the evil side of life and apparently was past reformation: his tragic death on the Colorado was in keeping with his rough and abandoned existence.

The Glanton crowd started for California, reaching the Colorado River, and purchased an interest in the Lincoln Ferry. While this business connection gave Glanton and his followers an improved standing, it furnished them, at the same time, an excellent opportunity to commit many atrocities and depredations upon unsuspecting travelers. Lincoln, of course, accepted the Glantons at what they appeared to be. It was not then the custom nor the part of wisdom to inquire much of who and what a man had been.

An Indian ferry, managed by a white man said to have been a deserter from the army, was in operation a few miles down the river. The Glanton crowd, certainly without the knowledge or approval of Dr. Lincoln, in order to obtain a monopoly of the transportation business, assassinated the Indian ferry manager, killed two Indians and destroyed the ferry boat.

These high-handed proceedings, murders and robberies committed by the Glanton's, though attributed by them to the Indians, brought upon the Lincoln ferry the wrath and enmity of the Yumas who decided to wipe out the whole outfit. On April 23, 1850, the murderous plans were carried out by the outraged savages who succeeded in slaying all but three of the group of white men engaged in operating the ferry. Eleven members of the Lincoln-Glanton party were killed, including the two leaders. The three ferrymen who, after a desperate battle, escaped death at the hands of the infuriated Yumas, managed to get away and finally reached Los Angeles. The ferry property and equipment was taken by the victorious savages, who destroyed what they could not use.

Just before his tragic death, Dr. Lincoln had written a letter to his parents, then visiting at St. Louis, Missouri, which was transmitted to them by his three surviving companions after their arrival at Los Angeles. This epistle, now a historic document in the annals of Arizona, throws much light on the Lincoln enterprise on the Colorado and is as follows:

"April 17, 1850.
Lincoln's Ferry.

"Dear Parents: I presume this letter will somewhat astonish you, when you observe my location, and as I have but a short notice of this opportunity of sending a few lines to the office, I have not the time to give you the particulars, only that I have located a Ferry at the junction of the two rivers, the Gila and the Colorado. This is the first and only ferry that has ever been estatblished on this river. I have been here some three months, during which time I have crossed over 20,000 Mexi-

cans, all bound for the mines and I am still carrying some 100 per day.

"During the three months that I have been here I have taken in over $60,000. My price—$1 per man—horse or mule $2—the pack $1—pack saddle 50 cents—saddle 25 cents. But my expenses are high. I have 12 Americans—deserters of the army—that I am paying $100 per month, also 10 Mexicans that I pay $40 each. These men I have all armed with Colts revolvers for which I paid $75 each, for I purchased them of a New York company of emigrants that were emigrating to California. I also have 16 U. S. rifles and a small piece of artillery which I purchased of the American consul at Guymas, Mexico.

"In addition to this I have to pay $20 per bushel for corn meal, 75 cents per pound for flour, unsifted, and for dried beef (the only meat I can get) I pay $1.90 per pound. For coffee I pay $4 per pound and all things according. My only reliance of anything to eat is of the Mexicans as they pass to the mines. From the enormous prices I have to pay for everything here you can well imagine what my profits are. I am nine days travel, as the fellow said, from any place, and I can go to no point, either way from this place, without passing through extensive plains destitute of both grass and water.

"The country is entirely inhabited by Indians and that without number. Their principal pursuit is stealing and robbing. They have made repeated declarations of friendship to me but have at different times proved themselves otherwise. They wear no clothing and have no regular place of living but are continually migrating from place to place, as it were, in search of prey. As regards my stay at this point I can give you but little satisfaction at present. I shall not remain longer than six months at all events and perhaps not more than one month. I shall sell at the first opportunity and make you all a visit if I meet with no misfortune. This is an unsafe place to live in and, in addition to that, this rush of emigrants will shortly cease, in a great measure, as the Mexicans are generally going to California to live.

"A few words in regard to the mines and I am done. As regards the gold in California there is a plenty and it is to be obtained by any one that will labor for it, or that is capable of managing business. I was at the mines but did no work in them, as you all well know.

"I shall go to San Francisco in about 30 days and by that time I shall know what I am going to do and, if I should not go immediately home from here, I will make arrangements there with some mercantile house that is connected with a house in Orleans, to furnish Nathan and Harry, or as many of you as wish, with means of conveyance by ship to San Francisco.

"Your son,

"A. LINCOLN."

When the letter of their unfortunate employer was forwarded to his parents by the three survivors of the river tragedy, they wrote the following letter of explanation which describes in detail the terrible massacre:

"Los Angeles, May 10th, 1850.

"My dear Sir: Enclosed you will find a letter written by your son just before he was massacred on Red River Calhoun Ferry, on the 23rd of April, 1850, by the Umah Indians. It is a painful duty to be called upon to render a faithful account of the massacre, yet I feel unwilling that any stigma should rest upon my companions. At the same time John J. Glanton. of Texas, Thomas Harlin, John Johnson, Henderson Smith, William Pewit of Texas, Thomas Wilson, Philadelphia, John Dorsey, Missouri, J. Gunn, Missouri, James M. Miller, New Jersey, John Jack (Negro), New York, were massacred.

"The Indians professed the utmost friendship for the party, so much so that we had the utmost confidence in their profession. They manifested it in many ways by acts of kindness towards us all. The head chief dined that day with your son, after which we went out to cut poles to fix a small launch. Whilst in the woods cutting poles some five or 20 Indians came out and informed us that the captain had sent them to carry poles to the house.

"One of the Indians asked Webster to let him have the hatchet, which he did, not paying any attention to him, yet Carr had his eye on him and saw him commence chopping on a tree just above his head, when he said to Webster take your hatchet and the Indians said "look out" and then run for the house as fast as possible; we followed. On leaving the bushes about 20 rifles were fired at us and many arrows came from different directions. However, they had over 400 warriors and we being

only three in number made them run for their lives. Carr took to the house but could not reach it. I and Webster made for the boats to see what was going on, but the Mexicans told us that they were all dead. After killing all in the boat, they dressed themselves up in our men's clothes, which deceived us and led us to believe that our men were still living, we fighting all the time. Carr called to the men to come over.

"'A Mexican woman was sewing in your son's tent and says that the head chief, "Cavioen," knocked the doctor in the head with a stone. The doctor, rising on his feet, was struck with a club and killed instantly. Glanton was served in the same way by another chief, whilst they both were sleeping. We cannot learn how the other men met their death. We have passed through much in the last few days and we feel exhausted. My hand refuses to write such melancholy tidings. Allow us—companions of your affectionate son—to sympathize with you in your deep distress, hoping that an ever-ruling Providence may give you strength to bear up against such sad affliction. Out of 17 there is only living three of us, William Carr, Canada, Marcus L. Webster, Texas, and Joseph A. Anderson, Washington, D. C.

"Hoping soon to hear from you and trusting that health and happiness may follow you through life,

"Truly your obedient servants,

"JOSEPH A. ANDERSON,
MARCUS L. WEBSTER,
WILLIAM CARR."

"To N. Lincoln,
St. Louis, Missouri.

"P. S. Your son's letter is dated the 27th of April, 1850, which is incorrect. We had no almanac and of course no time was kept. This you will perceive was owing to our taking no note of time.

"Yours,
J. A. A."

(The above letters are copies of the originals —verbatim et sieratim.

While the Yuma Indians were, as a rule, ready to help the early emigrants in crossing the river, the temporary ferries of Lieutenant Coutts and Colonel Carrasco, of the Mexican Boundary Commission, also gave them, for a short time, much-needed aid; the first regular ferry across the Colorado River was, unquestionably, the one established by Dr. Lincoln and known as the Lincoln Ferry.

The attack on the ferrymen by the Yuma Indians was probably not unexpected, as this tribe had always displayed an unfriendly attitude toward the whites who first invaded their country. Most of their killings and massacres, however, were accomplished by treachery, after the suspicions of their intended victims had been allayed by manifestations of friendship.

Dr. Abel B. Lincoln, victim of this almost-forgotten Colorado River tragedy, was the son of Nathan Lincoln, of Litchfield, Illinois, and had gone to California during the gold rush; tiring of life in the mining camps, he went to the west coast of Mexico, thence to the Colorado River, where he established his ferry and succumbed to the treachery of the Yuma Indians.

The doctor belonged to the older group of Lincoln children, having been born in the State of New York on May 15, 1820, the third child in the family. There is no doubt that he practiced medicine while at Lincoln Ferry, probably among those of the Yumas who were friendly, as well as among his own employees and those emigrants reaching the river who may have needed or desired medical attention. He probably also practiced dentistry in a limited way, giving attention to the simplest requirements, such as extracting teeth and treating mouth infections.

It is stated upon fairly good authority that Dr. Lincoln came west with Fremont's Expedition of 1848, and found himself in Alta, California when gold was discovered at Coloma. Dr. Lincoln himself states in his letter that he had been at the mines but had taken no part in mining operations.

The Lincolns were originally a Massachusetts family, Nathan Lincoln moving from there to New York, and thence to Litchfield, Ill., where he resided perhaps a dozen years; he was a patriotic man and served in the army during the war of 1812; he was the father of a large family, being twice married; by his first wife, who died while yet quite young, he had two children, and from his second marriage he was blessed with 10 children; in the early 50's, not long afer the death of his son Dr. Abel Lincoln. he removed to California—

going by water from New York via Cape Horn —and resided in the section of the state lying to the north of the San Francisco Bay country; he died at an advanced age and is buried in the old cemetery in the little town of Vacaville, Solano County, California.

The Lincolns continued to reside in the west and throughout the Pacific Slope today can be found many descendants of this New England family. Two of them are now residents of Arizona—Daisy Maude (Lincoln) Lockwood, of Phoenix, and Clement L. Lincoln, of Safford; the former is a daughter of Edgar Lincoln, a brother of the ill-fated Dr. Lincoln, and is the wife of Judge Alfred C. Lockwood, of the Arizona State Supreme Court. Clement L., a grand-nephew of Dr. Lincoln, is of a later generation. He is connected with the U. S. Forest Service. Edgar Lincoln, Mrs. Lockwood's father, was born in 1840, and was the 11th child in a family of 12.

Mrs. Lockwood's information concerning Dr. Lincoln and his activities is given in the following paragraphs:

"Dr. Abel Liscoln's tragic romance began when he fell in love with a Missouri girl whose fortune exceeded his own. A young medical graduate, he determined to seek his fortune in the West, in order to match hers. He joined Fremont's 4th Expedition,* which set out to find a pass for a Pacific railroad in the latter part of 1848, guided by Bill Williams. This journey, along the Rio Grande and through northern Mexico, occupied many months, and the party reached California in 1849, to be greeted with news of the gold rush. Apparently Dr. Lincoln visited the mines, but his interests did not lie there, and in the early part of 1850, probably in the latter part of January, he turned east to the junction of the Gila and Colorado rivers, at Yuma, where opportunity seemed to welcome him in the guise of a ferry for the emigrants who were crossing the Colorado in great numbers. At Yuma he practiced medicine and a crude form of dentistry, his patients probably being comprised of his employees, Indians and some of the Mexican and American emigrants.

"Dr. Lincoln purchased from Lt. Cave J. Coutts the small craft which he had used for a short time to ferry emigrants across the Colorado, enlarged it and built a second boat. Shortly after Dr. Lincoln's arrival at Yuma, one John Glanton appeared upon the scene and, together with one C. O. Brown, formed a partnership or "Company." Lincoln was made "Captain," Glanton second in command, and Brown treasurer.

"A certain army officer, named Anderson, had built a small boat to carry his family and effects across the river a short time before Lincoln's advent, and had then sold it to the Indians who operated in competition with the "white" ferry, and it was probably the chief contributing cause of the massacre, as Glanton and some of his immediate followers destroyed it and killed a number of the Indians.

"At the time of the massacre, Lincoln's housekeeper, a Mexican woman, was sewing or cooking in his tent, and rescued the letter he had just finished writing to his parents, hiding it in her blouse. She had seen one of the Indians kill Lincoln with a war club, and then she fled, with her husband and 14-year-old son, down to the river, where they managed to cross to the California side. There they met Carr, Webster and Anderson, the only other survivors of the carnage. These three and the Mexican family went on to Los Angeles, and the latter lived in that city for years. Brown had left before the massacre began, and afterward resided in Tucson.

"Uncle Abel, the third son of my grandfather, Nathan Lincoln, was born in the state of New York, May 15. 1820. My father was the 11th son of Nathan, born in Illinois, May 7, 1841. In 1850. the date of Uncle Abel's death, my father, then but nine years of age, together with his mother and several small brothers, sailed from New York, via Cape Horn, to take up their residence in California. Grandfather Lincoln had gone there in 1849.

The Lincolns were, as is well known, typical pioneers of America, but, so far as we can ascertain (from many family records), none was in any sense knowingly connected with criminal enterprises, although they may have been unfortunately and unwittingly associated with the 'bad men' to be found upon every frontier. as in Dr. Lincoln's case. In early Western days, it was neither "good form" nor a healthful matter to inquire closely into the geneaology or the past of any man. Glanton appeared upon the scene soon after Lincoln's arrival at Yuma, and being accepted upon his

(Continued on page 72)

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THE RADIO DEBATE

We have just read the radio debate between William Trufont Foster and Bower Aly for the affirmative and Morris Fishbein and R. G. Leland for the negative. The affirmative perhaps may have had a bit the best of the argument. We can not tell how it seemed to a layman; but to us the affirmative may have had the advantage in that they were arguing from an idealistic basis whereas the negative were arguing from a practical, and ordinary every day standpoint. There is no question but what in theory a system of practice is constructable which might appear immeasurably superior to any system of actual practice.

It seems to us that those arguing against state medicine failed to make use of the argument that we must deal with facts and not theories. The affirmative argued almost wholly on a theoretical basis.

It would seem that if state medicine were far superior to that which we now have in America, the incidence and death rate from diphtheria, small pox, malaria, and other preventable disease would be extremely low in countries that have systems of state medicine. When compared with the incidence of and death rate from those same diseases in America, such is not the case.

The SANTA CRUZ COUNTY MEDICAL SOCIETY is being extremely active in an endeavor to promote an excellent meeting of the Arizona State Medical Association April 23-25 inclusive. The committee has mailed each physician in the state of Arizona a blotter with the following announcement upon it:

DOCTOR! We're expecting you and your lady in Nogales April 23, 24, 25, 1936—Annual Meeting of the Arizona State Medical Association.

1. One of the BEST programs in the history of the association.
2. Separate Section meeting, Eye, Ear, Nose and Throat Specialists.
3. Separate Section meeting Mexican Physicians.
4. Numerous outstanding Scientific Exhibits.
5. Many splendid Commercial Exhibits.
6. Splendid—unusual—entertainment features for both men and women.
7. You've heard about the "Cock-fight." Don't miss it.
8. Special excursion to Guaymas (Old Mexico) On-The-Gulf. Make your reservations early.
9. Complete details of the meeting will be sent you later.

Of course, YOUR FRIENDS are invited to go with us to Guaymas.

DALLAS SOUTHERN CLINICAL SOCIETY

Plans for the Eighth Annual Spring Conference, March 16-19, inclusive, 1936, are complete. A greater attendance than ever before had is expected; practically 1000 were registered at the Conference of 1935.

In its program this year exceptional attention has been given to the canvass of the questionnaires returned by the doctors that attended the 1935 Conference and every possible effort has been made to fashion this year's program to the desires expressed in the questionnaires.

Two outstanding features of the Conference

are: First, an opportunity to visit Centennial Park, admission by registration badges, where the visitors may see how approximately twenty millions of dollars are being spent to convert Dallas into the Texas Centennial Exposition Center of 1936; one may play golf during the Conference on the course of the Lakewood Country Club. His registration badge will be accepted in lieu of greens fees and his best card of play will be chosen as his entrant in the trophy race; a large number of trophies are provided.

Endeavoring to secure outstanding medical men to represent each section of the country, the following list of distinguished guest speakers will appear during the Conference:

Dr. B. R. Kirklin, Rochester, Minn.—Roentgenology.

Dr. Walter A. Wells, Washington, D. C.—Otolaryngology.

Dr. Verne C. Hunt, Los Angeles, Calif.—Surgery.

Dr. Foster Kennedy, New York City—Neurology.

Dr. E. C. Ballenger. Atlanta, Ga.—Urology.

Dr. Hans Barkan, San Francisco, Calif.—Ophthalmology.

Dr. Louis A. Buie, Rochester, Minn.—Proctology.

Dr. C. Frederic Fluhmann, San Francisco, Calif.—Gynecology.

Dr. Alan Brown, Toronto, Canada—Pediatrics.

Dr. William R. Cubbins, Chicago, Ill.—Orthopedics.

Dr. Francis G. Blake, New Haven, Conn.—Medicine.

Dr. John A. Kolmer, Philadelphia, Pa.—Medicine.

A Palace of Medical Science for the California-Pacific International Exposition at San Diego will display numerous educational phases of scientific medicine. There will be exhibits of various kinds by the Los Angeles City and County Health Department, Automobile Club of California, Chicago Roentgen Club, Southwestern California Pathologists Association, Southwestern Pediatric Society, California Dairy Council and City Health Officer of San Diego County.

The American College of Surgeons will furnish speakers on certain days during the Exposition. During the school vacation period motion pictures of special interest to children will be shown. The General X-ray Corporation has already installed an exhibit and other commercial displays of prominent pharmaceutical establishments and manufacturers of medical supplies will have exhibits.

May 26 has been designated as California Medical Association Day at the Exposition and it is expected that a large number of physicians and their families will visit the exposition that day. The Exposition opens February 12th and will continue until September 9. The California and San Diego Medical Societies will be in charge of the Palace of Science.

MEN AND MEDICINE: In another column we are doing the unusual for SOUTHWESTERN MEDICINE by reprinting an article in full from another magazine. The question of State Medicine is dealt with in such convincing language that we believe the readers of SOUTHWESTERN MEDICINE will appreciate the reprinting of it. Every physician should read this article.

The Maricopa County Medical Society in conjunction with the secretary of the **Arizona State Association** and the **Maricopa County Library Board** have employed **Mrs. Kitty Ives Coleman** to conduct the affairs of these three organizations. This will probably result in greater efficiency for organized medicine in Arizona.

The officers of three of our constituent organizations now are supplying material for their own departments in SOUTHWESTERN MEDICINE. The fourth is invited and urged to do likewise.

OBITUARY

Dr. R. E. Adams, formerly of Fort Sumner, New Mexico, died at Thermopolis, Wyoming December 24 following a short illness of pneumonia; interment was in Commanche, Texas. Dr. Adams is survived by his widow and two children. It is sad to relate that upon hearing of Dr. Adams' death his mother passed away; a double funeral was held on December 28th. After leaving Fort Sumner, Dr. Adams was physician to a C. C. C. Camp at Carlsbad and later to a camp at Thermopolis.

A sectional meeting of the American College of Surgeons comprising the states of Texas, Oklahoma, Arkansas, Louisiana, New Mexico, Arizona, and the Republic of Mexico will be held in Dallas, March 4, 5, and 6. The states of Alabama, Mississippi, Tennessee, Georgia, Florida, Cuba, and Puerto Rico are also invited to participate. Dr. John O. McReynolds of Dallas is in charge of the local arrangements committee.

NEWS ITEMS

Drs. Leslie Kober and Carlos C. Craig are members of the Child Welfare Unit in the Junior Chamber of Commerce of Phoenix.

Dr. Nelson D. Brayton of Miami is chairman of the Miami Good Roads Boosters which favors the completion of highways 80, 89 and 66.

Dr. M. I. Leff of Glendale, Ariz., addressed the Young Democrats' Club of Phoenix a month or so ago.

Dr. C. Lawrence von Pohle of Chandler, Ariz., Chairman of the Chandler Chamber of Commerce announced that the principals of discussion of the meeting will be the lighting system for the park, and the Chandler welcome sign; they will also make plans for Arbor Day.

Dr. John E. Bacon of Miami, President of the Gila County Chamber of Commerce, was the principal speaker in November at the meeting of the Globe Junior Chamber of Commerce.

Mrs. West, the wife of Dr. O. C. West, addressed the Ebell Club of Phoenix upon her own observations in India. Dr. and Mrs. West spent three years in China and India on an expedition. Mrs. West expounded upon the life of Gandhi.

The Phoenix Lions' Club had their annual banquet during January and Dr. A. J. McIntyre was the toastmaster.

Dr. K. A. Herbst and Dr. E. J. Higgins of McNary were in Phoenix during January on a visit.

Dr. and Mrs. Dudley Fournier have been entertaining as house guests Mrs. Fournier's sister and her husband from Kingman, Arizona, and another sister from London, Canada.

Dr. A. N. Crain announced that for the three months period ending December 23rd, in addition to much other work, his department had presented 203 health talks and issued many bulletins and pamphlets.

Dr. Harry B. Gudgel of Phoenix was recently elected director of the Salvation Army at the annual meeting.

Dr. Benjamin Herzberg, whom it will be remembered was seriously injured in an automobile accident last fall and has made a complete recovery, has been sued by the administratrix of the nurse's estate, who was holding the flash light while he was changing the tires, for ten thousand dollars and she attained judgment for 250 dollars.

Dr. J. D. Hamer has been chosen head of Maricopa County Red Cross.

Dr. Trevor G. Browne and Dr. George Thorngate have recently been elected as directors of the Maricopa County Red Cross.

Dr. M. G. Fronske of Flagstaff was recently awarded the Silver Beaver for distinguished service to boyhood by the Boy Scout movement in Arizona.

Mrs. E. Payne Palmer, the wife of Dr. E. Payne Palmer, is visiting their two sons Paul and E. Payne, Jr., where they are studying medicine at the University of Pennsylvania.

Dr. R. L. Penn was the guest speaker at the Community Club meeting at Litchfield, Arizona, during January.

Dr. R. W. Hussong, city health officer of Phoenix, addressed the Phoenix Chapter of the American Association of Engineers on the health problems of Phoenix.

Dr. and Mrs. O. E. Utzinger of Ray, Arizona, were visitors in Phoenix recently.

Dr. and Mrs. R. B. Durfee of Bisbee spent a short time in Phoenix during January.

Dr. and Mrs. P. L. Hyder of Date Creek, Ariz., were in Phoenix during January.

The St. Joseph Hospital of Albuquerque, New Mexico, is installing a new shock-proof 20 K. V. P. deep therapy General Electric X-ray unit.

The son of Dr. Travis Bennett of El Paso, who has been critically ill, is reported much improved.

Dr. Bloyce Britton of El Paso, who has been suffering with severe stomach trouble, went by ambulance plane to Kansas City, Missouri, to undergo treatment.

Dr. Morris P. Spearman of El Paso, Texas, addressed a lay audience on the subject of Prevention of Blindness.

Dr. A. M. Tuthill of Phoenix, Ariz., was chairman of the program committee of the President's ball. He has recently been named Adjutant General of the State of Arizona.

Dr. A. G. Hendrick of El Paso spoke on "Medical Care of Prisoners" before the Women's Auxiliary of the El Paso County Medical Association January 13 at the home of Mrs. R. B. Homan, Sr., at 1837 Grandview.

Dr. Bogel Jeffery of Gila Bend, Ariz., was recently appointed deputy county physician.

Dr. Max Porges of Czechoslovakia spent some time in Phoenix during January. He is an authority on rheumatism. He is very much pleased with the climate of the Southwest,. and says this is an especially good place for rheumatics.

Dr. A. C. Armbruster and his son, Dr. A. Carl Armbruster of Phoenix, Arizona, have opened offices in the Security Building for the practice of medicine and surgery.

The wife of Dr. Harley Yandell of Phoenix, Arizona is recovering from a mastoid operation.

Dr. R. J .Stroud of Tempe, Arizona, has been mentioned as a possible candidate on the Republican ticket for Governor of Arizona. The doctor is taking his family to Europe to be gone several months.

Dr. Philip G. Corliss of Somerton, Arizona has opened a new and modern emergency hospital on the corner of Canal St. and Somerton Ave. in the Corliss Bldg.

Dr. and Mrs. J. S. Gonzales attended the Rosebowl Tournament in Pasadena over the New Year.

Dr. and Mrs. E. C. Houle spent the Christmas holidays visiting friends at Empalme, Sonora, Mexico. Dr. Houle was formerly chief surgeon of the Southern Pacific Railroad in Mexico, and was located in Empalme.

STATE MEDICAL ASSOCIATION

C. R. K. Swetnam, M. D., President
D. F. Harbridge, M. D., Secretary

ARIZONA

ANNOUNCEMENTS

ARIZONA SECTION OF JOURNAL

With this issue of SOUTHWESTERN MEDICINE, the officers of the Arizona State Medical Association are editing a section of the Journal as reserved for the officers of the constituent associations. This is a new venture for the Arizona Association which we trust will be found both interesting and informative to all readers.

CENTRAL OFFICE. Due to an ever-increasing amount of clerical work, which the Secretary alone was no longer able to handle to his satisfaction, a lay-secretary has been temporarily employed by the Association and a central office opened to clear all business with speed and dispatch. If the venture is found to be an advantageous one, the office will be made a permanent one. The central office stands ready to assist the county societies in every way possible, as well as to aid the American Medical Association in distributing the findings of the parent-body more directly to members of the profession in Arizona.

HEALTH BULLETINS. For the benefit of lay organizations, such as Women's Clubs, Parent Teacher Associations, Public Nursing Centers, etc., the Arizona Association is now issuing monthly mimeographed Health Bulletins for state-wide distribution. The bulletins have been warmly received from the initial number and will be continued indefinitely.

BROADCASTING PROGRAM

Listen in over Station KTAR each Wednesday at 9:30 P. M. for a new weekly feature to be known as THE MEDICAL QUARTER HOUR. This series of programs will continue for three months under the sponsorship of three Phoenix pharmacies — Dorsey-Burke, Robertsons, and Waylands. Suggestions and criticisms from members of the profession regarding improvement in these programs will be sincerely welcome, as it is the wish of all concerned to make these broadcasts of interest to the radio audience and to the profession as well.

THE DOCTOR

Today, more than ever before, the doctor is concerned with the two major medical problems—those that affect himself as an individual physician, and those that affect him in relationship to his public. These two general divisions of medical problems have always existed, but never before have they become such a matter of public concern as at the moment. Members of the profession are a little puzzled and, we might safely say, somewhat resentful, as to the reason for centralizing public scrutiny on the medical fraternity alone. The doctor, himself, would like to know whence all this and what it portends. Organized medicine is endeavoring in an open-minded, ethical manner, to learn what fault, if any, on the part of the profession has prompted such an intensive survey and scrutiny on the part of the political public.

Always in the past the solution of the doctor's individual problems has depended upon his own personality and upon his training. It would seem, from the present questioning of the profession, that the doctor's individual problems and responsibilities are not to remain his own. No longer are his costly training, his scientific office equipment, his charges for services apparently his own professional rights. The public would have something to say about these matters for him, it seems. Where has the doctor erred to focus the public "spot-light" upon his individual activities as a physician?

The medical profession, no less than others of special training and talent, has always had its problems of human relations—how best to serve the public with fairness and benefit to all concerned—how to advance the study and findings of scientific medicine in order that the bodily ills of humanity might better be met and conquered. There has been a steady, and gratifying'y rapid progress and advance on the part of scientific medicine. The beneficial re-

sults of such study and scientific research have been passed, unstintingly, on to the public. Where, in its human relationships, has the profession erred to give cause for challenging its rights so to serve suffering humanity?

Every individual physician, every constituent and component medical society, should avail himself and itself of every possible medium for meeting present challenges against the profession, and for reaching an ultimate intelligent appraisal of the situation with the ultimate good of society and the profession, and that good alone, in view. Study and thought, on the part of the profession, to the ever-increasing number of questions relating to the two major medical problems—the doctor himself, and his relationship to society—is the end to the means.

COUNTY MEDICAL SOCIETIES

YAVAPAI COUNTY

Post Graduate Study Club. Dr. C. E. Yount, Secretary of Yavapai Society, announces that the Post Graduate Study Club, which was discontinued for a period, was re-inaugurated Tuesday, January 20, the re-organization meeting being held in Jerome. Dr. A. C. Carlson, head surgeon of the United Verde Copper Co., and his staff served as hosts at a well-appointed dinner preceding the scientific session. Members of the Society attending both the dinner and the Study Club were: Doctors E. A. Born, James H. Allen, Geo. O. Bassett, A. C. Carlson, John W. Flinn, M. S. Gaede, R. K. Hilton, H. T. Southworth, W. F. Hein, R. N. Looney, Joseph P. McNally, C. R. K. Swetnam, John T. Taylor, C. E. Yount, C. E. Yount, Jr., and Doctors Roberts and Gardina as guests.

A case for Group I, Jerome and Verde Valley, was presented by Drs. Carlson and Gaede in a most interesting and masterly way. Dr. Flinn read the Massachusetts General Hospital Staff discussion with pathological and post mortem findings.

The case for Group III, Prescott, was presented by Drs. McNally and Yount, with Dr. Bassett reading the Massachusetts General Hospital Staff discussion covering post mortem and pathological findings.

The meeting, successful from every standpoint, will be repeated in February.

New Member: The Yavapai County Medical Society reports Dr. W. F. Hein as a new member of the Society. Dr. Hein graduated from the University of Tennessee Medical College, receiving his Arizona state certificate to practice in August of 1935. Dr. Hein is located at Clemenceau devoting his practice to General and Industrial Medicine.

GILA COUNTY

ELECTION OF OFFICERS

The Gila County Medical Society enjoyed a banquet at the Dominion Hotel in Globe on January 21, 1936. The occasion was the annual election of officers, after a successful year's work under the presidency of Dr. Clarence Gunter, the retiring president. An analysis of the attendance for the year on the part of the society's membership revealed a percentage of 77½. A general review of the year's work was presented by the secretary and discussed by the membership. Two membrs were added to the society roster for the year concluded: Dr. Charles B. Huestis, surgeon to the Ray Consolidated Mining Company at Hayden, Arizona, and Dr. J. B. Hancock of Fort Apache, Arizona, who is the U. S. Government's specialist on trachoma work for the United States Indian Bureau in western New Mexico and Arizona. The election of officers was as follows: President, Dr. Nelson D. Brayton, Miami; Vice-President, Dr. John Hagan of Inspiration; Secretary, Dr. Cyril M. Cron of Miami. Dr. Chester R. Swackhamer of Superior, Arizona, was elected Censor for the three-year term expiring December 31, 1938.

GILA COUNTY MEDICAL SOCIETY NEWS

Dr. I. E. Harris, formerly physician at the Phoenix Transient Camp, under the direction of the Maricopa County Welfare Board, is now associated with Dr. John E. Bacon on the staff of the Miami-Inspiration Hospital.

Dr. George LeBerge, formerly of Payson, has moved his offices to Peoria, Arizona. This leaves the attractive field of Payson without a physician.

The epidemic of influenza, which has afflicted Gila County, has been exceptionally severe with several deaths occurring from pneumonia.

Dr. William B. Watts, Jr., of the Miami-Inspiration Hospital Staff, who has been absent due to extended illness and recuperation at

San Francisco, has recovered and reported for duty at the hospital.

The Miami-Inspiration Hospital was reopened by Dr. John E. Bacon on January 1st, 1936, the institution now being open to the employees and families of the Miami and Inspiration Mines.

CARE OF THE INDIGENT IN GILA COUNTY, ARIZONA

An arrangement exists between the Gila County Medical Society and the Board of Supervisors whereby, in lieu of treatment to indigents in the Gila County Hospital, the physicians of the Staff are privileged to enter their private cases in this institution. This arrangement is unique among the hospitals of the nation and occurs in but three other such institutions. The County Hospital of San Luis Obispo, California, is a western hospital, havnig a similar agreement between its Medical Society and Board of Supervisors.

Membership on the Gila County Hospital Visiting Staff is determined by recommendation of the Staff to the Supervisors, the minimum requirement being that the applicant shall be a member in good standing of the Gila County Medical Society. This organization is, of necessity, separate and distinct from the County Medical Society.

The Visiting Staff of the Hospital held its annual meeting December 12, 1935, at which time Dr. R. D. Kennedy was elected Chief of Staff; Dr. Cyril M. Cron, Vice-president, and Dr. Nelson D. Brayton, secretary. The Staff holds monthly meetings at which all deaths occuring at the hospital are reviewed while outstanding cases are subjected to careful study.

Repairs to the Hospital are contemplated by the County Board of Supervisors who, together with Staff members, hope soon to have a new operating room with modern equipment, both of which are sorely needed.

ANNUAL CONFERENCE OF STATE SECRETARIES

Reported by Dr. D. F. Harbridge,

CONFERENCE HELD AT CHICAGO

The annual conference of Secretaries of Constituent State Medical Associations, held recently at Chicago, proved to be one of the most helpful meetings ever conducted by the organization. Component county societies will be interested in the subjects discussed at the conference and with any beneficial reaction which may, and should, ensue to all state memberships.

CONFERENCE THEME

Two major topics comprised the theme of the conference: 1. Over-organization of medical groups, and 2. Social Medicine. The Arizona secretary had the privilege of addressing the convention body on the topic, "The Need for Concerted Action on the Part of All Units of the Organized Profession." This paper in full will appear in SOUTHWESTERN MEDICINE at a later date when officially released by the American Medical Association through the pages of the BULLETIN.

OVER-ORGANIZATION OF MEDICAL GROUPS

Under the theme, "Over-organization of Medical Groups," it was brought out that there are at present too many organizations of specialty groups, apart from the societies, which tend to weaken the National, State and County associations. Morris Fishbein, editor of the Journal of the American Medical Association, emphasized this fact very forcibly in his paper, "A Survey of Medical Organizations." Dr. Fishbein stated that there is a recorded list of 13 specialty groups aside from the regular state and county societies, and that these groups have so diverted the attention of the profession from the true intent of organized medicine as to make the encroachments of social medicine more possible. Practically every paper given during the convention emphasized the point that no one doctor can, as many do, belong to a multiplicity of special medical groups without weakening the parent body—organized medicine. The consensus of opinion, as revealed by the several papers, was: That constituent State and component county medical societies should draw closer and closer together, and that they should gradually absorb the specialty groups and direct their activities, in order to fulfill the purposes of organized medicine in its human relationships.

INSURANCE CARE—ITS ACTUAL COST

One of the most interesting and enlightening points developed in the discussions coming under the general head of Social Medicine, was that pertaining to the cost of health insurance. Dr. J. G. Crownhart, Secretary of the State Medical Society of Wisconsin, presented

a thought-provoking fact in his paper, "A Basis for Future Developments of Medical Service," regarding the actual cost of medical care per person under an insurance plan. Dr. Crownhart presented figures from a nationally-known and recognized insurance company to show that the actual cost for giving medical care to one person, under any insurance plan, is $27 annually, or better than $2 monthly. Dr. Crownhart also demonstrated that medical groups endeavoring to care for patients under insurance plans of their own direction are getting, on the average, a maximum of $1.50 per person monthly. These two facts, coupled together, would seem to foretell the ultimate failure of medical groups operating on a basis of less than $2 monthly per person so insured. This exegesis, coming as it does, from a sound insurance company, should command the attention of all medical groups considering any medical insurance plan for the care of the low income group.

SUCCESSFUL PLAN FOR CARE OF INDIGENT SICK

A most unique and successful plan for the care of the indigent sick from the physician's standpoint was explained as existing in Washington, D. C. There the medical organization is given a place in the Community Chest budget, with funds set aside through that medium for giving the doctor a reasonable compensation in return for his care of the indigent. This is a thought that might be carried to successful action in communities of the Southwest.

SUBSIDIARY CONFERENCE THEMES

Medical Journals. A pertinent suggestion to editors of State Medical Journals was: that they follow a policy of presenting editorials in the first pages of the magazines where they would be accessible for immediate reading. The editorial policy of any publication is of paramount interest to its readers. To give editorials the preferential position of the first pages would be a pleasing innovation, stated E. M .Shanklin, Editor of the Journal of the Indiana State Medical Association, in his paper before the secretaries and State editors.

Drugs: A paper by Paul Nicholas Leech, Secretary of the Council on Pharmacy and Chemistry of the American Medical Association, developed points of direct interest to all practicing physicians. It was urged that, instead of taking the word of the tradesman that certain drug products are of great purity, of high therapeutic value, etc., the physician himself should take time to consult with the Council on Pharmacy and Chemistry and receive from that body definite information as to some unknown drug before accepting the assertions regarding its merits by those whose main interest is merely its sale.

This is really too condensed a report of such an important assembly. In summary there is only space to state that each and every physician should read the A. M. A. Bulletin as it comes to his desk and give the papers presented at this conference his careful attention and thought. The profession is being challenged on its economic front to a threatening degree. A careful reading of all matter presented to the physician through the carefully prepared papers of all such annual conferences and meetings will give a clear insight into the situation and point the way to a fair solution of the problems confronting the profession as a whole.

Medical Annals of Arizona

(Continued from page 65)

own representations, was accepted also as a partner, or member of the 'Company' formed to engage in the ferry business. From the Lincoln letter, Uncle Abel had been operating the ferry but three months, and was greatly dissatisfied with conditions, and planning to 'sell at the first opportunity.' He also points out that 'this is an unsafe place to live in,' and my grandfather, Nathan Lincoln, always believed that his unease was from growing apprehension of the Glanton crowd, about whom he had become suspicious or had discovered the truth, as well as from danger of Indians. who had 'protested friendship, but proved themselves otherwise.'

"The nearest we can come to tracing the relationship between Abel Lincoln and Abraham Lincoln is this: Abel's grandfather was Joshua Lincoln, (married in Taunton, Mass., in 1783); our family tradition has it that Nathan had an 'Uncle John' Lincoln, who lived in Massachusetts, then Pennsylvania, and finally Virginia. My own father told me that his father (Na-

than) spoke of visits from 'Uncle John' from Virginia.

"A letter written by Abraham Lincoln in March, 1848, addressed to Solomon Lincoln, now owned by Dr. A. S. W. Rosenbach of New York City, states: 'My grandfather's name was Abraham, the same as my own. My grandfather went from Rockingham County in Virginia to Kentucky about the year 1782, and two years after was killed by the Indians. **We have a vague tradition that my great-grandfather went from Pennsylvania to Virginia** and that he was a Quaker.'

"The President's great-grandfather was probably not John, but one of his sons. My grandfather, Nathan, having been in the War of 1812, was of course one of the older generation.

"Hence the **probability** is that Abel Lincoln's grandfather (Joshua) and Abraham Lincoln's great-grandfather were brothers.

MAUDE LINCOLN LOCKWOOD."

January 7, 1936.

The wholesale killing of the Lincoln-Glanton party forced the government to order—on July 4, 1850—the establishment of a military post at that point. This order was carried out by Major S. P. Heintzelman in March, 1851, and the post was given the name of Fort Yuma.

Such, in brief, is the story of the beginning, the operation and the destruction of Dr. Lincoln's ferry—a pioneer enterprise whose tragic record is written in blood and fire. It is to be regretted that we know nothing more of his medical training and work.

*Encyclopedia Britannica, (14th ed.) Vol. 9, pp. 753-4; "Touring Topics," July 1928; Clark's History of Arizona.

(To be continued)

ARIZONA STATE MEETING

The entertainment features in connection with the 1936 meeting of the Arizona State Medical Association to be held in Nogales, April 23, 24, 25—for both men and ladies—will be quite different to that enjoyed in the past. Rest assured nothing is being left undone by the host-society which will add to your pleasure.

On Thursday and Friday afternoons, an innovation this year, will be the Social Hour. The hour from 5:00 to 6:00 p. m. each day, will be utilized purely for social purposes ,and it is hoped that all, men and women, will take advantage of this pleasure. The place will be the lobby of Hotel Montezuma, and you just wait and see what we'll have waiting for you there. Be sure and bring your wife to the social hour, and rub elbows fraternally with the great group of doctors and their ladies who constitute the Arizona State Medical Association. Let's get acquainted. Let's know one another better. Let's have a good time.

You've heard about the cock-fight; well! we have fifteen ready to go. Bring your pocketbook along. The fight will take place at 5 p. m., on Thursday, April 23rd. And say, following the cock-fight, we'll go to the Club Royal, where we'll have dinner, and at 8:00 o'clock, the doors will be closed, the window shades will be lowered, and if you don't enjoy one of the finest evenings of real entertainment, then we'll miss our bet. This event is for MEN ONLY. Better bring along your colored glasses. Enuf sed.

While the men are enjoying the smoker, the ladies will be royally entertained elsewhere. Full details in the near future.

On Friday night, 7:00 o'clock, the annual banquet and dance will take place at the Cavern Cafe. Immediately following the banquet a drawing for a number of valuable prizes will take place. There will be prizes for both men and ladies. The committee has already obtained a $20 medical bag; a $29.50 Baumanometer blood pressure outfit; a mighty fine set of Bath-O-meter bathroom scales; a $25 hand woven Mexican serape; a fine bottle of black narcissus perfume, and others too numerous to mention. Full details about these prizes in the near future. No one will be eligible to participate in the drawing for the prizes who is not present at the banquet.

On Saturday afternoon following adjournment of the annual meeting, a special excursion will leave Nogales for Guaymas (Old Mexico). We arrive there early Sunday morning, returning to Nogales Tuesday morning, having two full days at Guaymas to participate in the many pleasures to be offered there. Full details soon. Make ready to go. You'll never again be able to enjoy such low rates as will be offered on this occasion.

Program: Dr. J. D. Hamer, chairman of the program committee promises one of the best programs in the history of the Association. Then, too, there will be a special group program for the eye, ear, nose and throat specialists. This program has been completed and it is believed it will be appreciated and enjoyed by the profession. There is also the special group—Mexican physician's program. This ought to assure us of a splendid attendance of Mexican physicians from the Republic of Mexico. Then we must consider our splendid scientific and commercial exhibits; they are going to be mighty fine.

Make your plans now to come to Nogales, April 23 and rub elbows with your brother practitioners and participate in an honest-to-goodness meeting. We are doing our utmost down here in Santa Cruz to arrange everything for your edification and

enjoyment, and we wish you to come and be certain to bring along your lady. The meeting can never be complete without the ladies.

Keep an eye open for the March issue of Southwestern Medicine. We'll give you complete details at that time.

Scientific Exhibits

The Wyatt Clinic, Tucson, Arizona; The Arizona State Board of Health, Phoenix, Arizona; United States Public Health Service, Washington, D. C.; Drs. Soiland, Costolow and Meland, Los Angeles, Calif.; Drs. Bacon and Watts, Miami, Arizona; Dr. F. T. Hogeland, Cananea, Son., Mexico; American Society for the Control of Cancer, New York, N. Y.; American Medical Association, Chicago, Ill.; Metropolitan Life Insurance Co., New York, N. Y.; Drs. Nethercut and Allen, Chicago, Ill; The Desert Sanatorium of Southern Arizona, Tucson, Arizona; Dr. Hans Barkan, San Francisco, Calif.; Dr. John O. McReynolds, Dallas, Texas; Dr. R. O. Schofield, Boulder City, Nevada; The Pathological Laboratory, Phoenix, Arizona; and a number of others tentatively promised. Full details in the March issue of Southwestern Medicine.

Commercial Exhibits

The Southwestern Surgical Supply Co., Phoenix, Arizona; A. S. Aloe Company, Los Angeles, Calif.; American Optical Co., Los Angeles, Calif.; Cutter Laboratories, Berkeley, Calif.; General Electric X-Ray Corporation, Los Angeles, Calif.; Stokely Brothers & Company, Oakland, Calif.; Kelly's Prescription Shop and Arizona Brace Shop, Tucson, Arizona; Philip Morris & Co., Ltd., New York, N. Y.; The Harrower Laboratory, Glendale, Calif.; Spicer & Company, Glendale, Calif.; Retail Druggists of Nogales, Nogales, Arizona, with several others tentatively promised. Full details in the March issue of Southwestern Medicine.

EL PASO COUNTY MEDICAL SOCIETY

The meeting of Dec. 23, 1935, was called to order by Dr. B. F. Stevens at 8: p. m. at Hotel Dieu Nurses' Home.

The minutes of the previous meeting were read and approved.

Dr. Rennick reported on the Central Medical and Dental Bureau the burden of which was to the effect that the Bureau should be given assistance before it becomes self sustaining.

Dr. Egbert suggested underwriting the Bureau up to $200 per month for a period of six months. Dr. R. B. Homan thought this should be done. No action was taken.

Dr. Gorman spoke on the Southwestern Medical Association commenting on enlargement of membership and change in financing to permit the Association to subsidize a portion of the expense of the annual meeting which will result in lessened burden on the El Paso doctors. He also discussed the advisability of changing the type of programs.

Dr. W. R. Jamieson discussed the problem of civilian patronage at William Beaumont Hospital. Dr. Stevens appointed Dr. Jamieson to confer with the secretary as to steps to be taken.

Election of officers was held and the following were elected:

President, Dr. Stephen Schuster; Vice-President, Dr. George Turner; Secretary-Treasurer, Dr. L. O. Dutton; Librarian, Dr. McCamant; Board of Control, Dr. Leslie Smith; Board of Censors, Dr. Henry Safford, Jr.; Medical Economics Committee, Dr. B. F. Stevens and Dr. R. B. Homan, Jr.; Associate Editor Southwestern Medicine, Dr. J. Mott Rawlings.

Delegates, Dr. Felix Miller; Dr. McCamant and Dr. Egbert tied for second place and agreed to decide between themselves as to which one would be the alternate. Dr. R. B. Homan received fourth place for alternate.

Adjourned at 9:30 p. m.

The Jan. 13, 1936 meeting was called to order by Dr. B. F. Stevens at 7:45 p. m. at the Hotel Dieu Nurses' Home. Dr. Stevens suggested that Dr. S. F. King and Dr. P. R. Outlaw be made honorary members of the society. This was unanimously voted. With brief remarks Dr. Stevens relinquished the chair to Dr. Stephen S. Schuster, the incoming president. Dr. Schuster briefly thanked the Society for the honor bestowed upon him and requested the cooperation of each member to make 1936 profitable for the Society.

The minutes of the previous meeting were read and approved.

Dr. Multhauf read an interesting case report of congenital valves of the posterior urethra. The paper was discussed by Drs. Curtis, R. Thompson, B. F. Stevens and Multhauf.

Dr. Rennick read a paper on infant feeding in the first trimester which was discussed by Drs. Stevens, Werley, Dutton, Gorman, Frank Schuster, Awe, Thompson and Rennick.

Dr. R. B. Homan, Jr., gave a brief case report and showed the x-ray films of a patient presenting a draining pulmonary sinus and invited suggestions as to treatment. Discussed by Drs. Ralph Homan, R. B. Homan, Sr., Egbert and J. Mott Rawlings.

Dr. Dutton briefly reviewed a case of multiple allergy in a child seven years of age which presented the symptoms of asthma, diarrhea, enuresis and a peculiar irritated lesion of the urethral meatus all of which were markedly benefited by diet.

Dr. J. Mott Rawlings briefly reveiewed a case of asthma in an 11 year old child who presented symptoms of myocardial failure and who has been relieved by diet and house dust desensitization.

Dr. Ralph Homan read a resolution from the advisory board of the Central Medical and Dental Bureau:

To the El Paso County Medical Society in Regular Session on January 13, 1936: At the meeting of the executive committee of the El Paso County Medical Society the Advisory Board of the Central Medical-Dental Service of the El Paso Medical Society and the El Paso Dental Society and the Governing Board of the Central Medical-Dental Service the following was unanimously passed:

We (the Advisory Board) believe the Central Medical-Dental Service has made a definite contribution to the community and believe it should be continued and for that purpose we recommend to the El Paso County Medical Society the allocation of what funds may be necessery up to the sum of seven hundred and fifty dollars ($750.00) for its continuance. Respectfully submitted.

Advisory Board.

Dr. J. Mott Rawlings moved its adoption and Dr. Leslies Smith seconded the motion. After general discussion the motion was passed with no dissenting vote.

Dr. Robert S. Hardwick was accepted for membership by transfer from the Omsted-Houston-Fillmore-Dodge Co., Medical Society, Minnesota.

The application of Dr. M. P. Spearman for

membership was given its first reading and referred to the Board of Censors.

The financial report of the Society for 1935 was briefly outlined and Dr. Schuster appointed Drs. B. P. Stevens and Gorman as an auditing committee.

Dr. J. Mott Rawlings asked for cooperation from the Society in securing material for Southwestern Medicine. Meeting was adjourned at 10:15 p. m.

L. O. DUTTON, M. D., Secretary.

PUBLIC HEALTH NOTES

J. ROSSLYN EARP, DR. P. H.
Directors New Mexico State Bureau
of Public Health.

Stokes on Syphilis: In a recent contribution Dr. John H. Stokes stimulates our flagging interest in the campaign against syphilis. Life insurance companies who substitute the "inexpressibly futile and silly question 'Have you had a venereal disease?'" for a blood examination should be punished by support of total disability claims arising as a result of such negligence. An effort should be made to secure the cooperation of the drug trade against counter prescribing. Women's clubs should hear of medical examinations as a protection for marriage and of extragenital chancres that have resulted from indiscriminate petting. The legislators should be harried by a lobbyist "who talks syphilis with the zeal and persuasiveness of an armament salesman."

Impressed by the royalties paid by ballyhoo in industry, Dr. Stokes has made an attempt to present in package form some of the important facts about syphilis. Here is one such package selected from a number that accompany his articles.

WHAT COULD WORK AND WHY IT DOESN'T
What!
The Transmission of the Diseases Could Be All But Stopped.

WHY NOT?

1. Nobody chases down the source of individual infections. Doctor too busy, patient was drunk, source is on the move, the State a slacker in epidemiologic work with this disease.
2. Doctor gives too little 914 or 606 (dose, number).
3. Patient jumps treatment (costs too much, hurts too bad, signs disappear), is told he has a negative blood, inconvenient hours, doesn't give a damn.
4. Doctor doesn't bother to find out about or treat syphilis before operations, childbirth, transfusions; infects himself, his nurses, his family, other patients.
5. Doctors won't quietly take Wassermanns on his pregnant patients. Thinks they're too good, or he'll lose the business, doesn't believe in treating prenatally anyway, because he doesn't read.

WHAT THEN?

1. State social service aiding an assigned epidemiologist to chase down sources and contacts.
2. Preach 30-0-60-2—thirty arsenicals, 0 rest periods, 60 bismuth, 2 years' heavy metal and observation.
3. Organize for cheaper treatment, no negative Wassermann reports given to patients first year,

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5. Talk to women about demanding blood tests and to doctors about taking them.

A Filtrable Tuberculosis Virus? Bacteria we know; more recently we have become acquainted with filter passing viruses. Are there or are there not creatures that are sometimes too big but at other time small enough to pass through a filter candle? Among the organisms increasingly suspected of possessing a filtrable stage in their life history is the tubercle bacillus. Two bacteriologists from the Westminister Hospital Medical School review the history of this suspicion and the results of their experiments. The invention of membrane filters has greatly aided research in this field. The writers show that infectious material passes more readily through .75 membrane than through .54 membrane but will occasionally pass through 0.3 membrane. Such virus also might be expected to pass through placentas. That congenital tuberculosis is not more common than it is must be attributed to the fact that only granular tubercle bacilli are found to have this filtrable stage. Perhaps the great majority of strains of tubercle bacilli never become granular and hence are never filtrable.

Wanted: Statistical Editors: In Tubercle is an article on cavitation which shows that left sided cavities appear to have better prognosis than the right. In another article it is claimed that patients with cavitation in the right lung have longer average duration of life than those with cavities on the left. One wonders whether if he were to toss a penny 100 times if he might not write a scientific article relating that heads turn up more frequently than tails (or vice versa). Until editors insist that writers of statistical articles make use of the probable error concept and demonstrate the statistical significance of their conclusions, the reader might just as well skip them.

1. Stokes, John H.: The Public, the Doctor and the Syphilis Problem, Jour. Soc. Hyg. 21:313 1935.

2. Fraenkel, E. M. and Pulvertaft, J. V.: Measurements of filtering-passing particles of the Tubercle Bacillus, Tubercle, 17:97, 1935.

MEDICINE AND MEN

A Discussion of Compulsory Sickness Insurance

FREDERIC E. SONDERN, M. D.
President Medical Society, State of N. Y.

(Reprinted from N. Y. State Jour. of Med., by permission of Debate Handbook. Italics are ours.)

In times of great economic stress and hardship, when we are called upon by the inexorable rotation of events to pay for past excesses, it seems that the penalty is too cruel to bear, that it is inequitably exacted, that some easy way to escape it can be found. It is in such times that we look with sympathy and commiseration on the lot of the unfortunate and especially the sick who are unable to pay the cost of illness. Moved by commendable sympathy and zeal, certain sociologists and social workers are proposing such cure-alls as compulsory sickness insurance, advocated as a way to bring adequate medical care to all the people. It is my purpose here to discuss this scheme, which has incurred the almost universal condemnation of the medical profession, the very men who would be called upon to make it effective, and who judge it in the light of their experience with medicine and men.

I believe I speak for the medical profession when I say that we are moved deeply by the spectacle of people in need, and I may add, what later I shall refer to again, that we have continuously throughout the depression and even before, offered our services unstintingly in the alleviation of the miseries of those who are unable to pay for medical care, as well as those able to pay only part of its cost. This is a traditional, historic obligation. The medical profession of America has met this responsibility within the last five or six years in a creditable manner, to the point of severe individual financial sacrifice, thus accepting its share of the catastrophe which has descended upon all of us.

So well has this emergency been met under the prevailing system of practice that it can be said that there is little lack of medical care if the person needing it, or his family, will seek it. This may not be true in isolated sections of the country, or in sporadic instances, but in general it is true among the majority of our population. Physicians do not eject patients from their offices because they do not have cash in their hands, nor do clinics close their doors to them. If the patient cannot pay the doctor in full, he pays less; if he has nothing, he is treated without cost or is referred to institutions which care for indigent patients. *This is always the case if the patient seeks medical care; if he does not can it be forced on him to good purpose?*

But, it is claimed there is a lack of medical care generally in this country. It is made to look as if the medical profession, some way or other, is withholding from people the services it is their business to provide. This claim is based largely on the results of the periodic medical examination of school children and the medical examination of men drafted for war service, and on certain surveys of small population groups. These reveal without doubt large numbers of cases of poor health, defects which can be remedied, actual disease and medical neglect. Does this justify a belief that a system of compulsory sickness insurance would remedy the situation? It has not done so in any country where this system of medical practice is in operation.

Proponents of compulsory sickness insurance point to the fact that surveys have shown that almost half of the American people get no medical care whatever. But these surveys do not disclose what type of medical care these persons needed, nor whether they had sought it and why they failed to obtain it. So this fact proves nothing, except perhaps this: that almost half of the population are without medical care of a preventive rather than a curative type, doubtless because they are unaware of the value of preventive medicine, or are indifferent, or ignorant. We have no facts

whatever from such studies as these showing that any percentage of the population whatever, desirous of medical care, and seeking it, are not able to get what they need and want.

Therefore, the problem is not to bring to their door something which as yet they do not feel they need, offered as a part of a compulsory system of medical practice, but *the problem is to educate* these people to know that they should have periodic health examinations, that they should consult a physician early when symptoms of disease appear, that the old adage is still true: "prevention is better than cure." Many of the advocates of sickness insurance are recruited from the ranks of health educational workers in connection with official or voluntary agencies. It is recommended that they concentrate on these health education programs, which are as yet unfinished, redoubling their efforts to create the desire for good health, and disseminating the knowledge of how medical aid can improve it, using those gradual processes of education which have been attended by sound and encouraging improvement in the past. This is wiser than to attempt, by an all-inclusive scheme, to find a panacea for ills too various for a simple cure.

It is health education that teaches the individual and the parents of children to seek periodic health examination for hidden disease and medical help in case of illness. The availability of the doctor under any system is no safeguard against disease in people who disregard their health.

Before passing to the consideration of the proposed insurance law itself, let me say that *if the experience of the medical profession justified the opinion that the system would result in adequate medical care for all of the people, they would be the loudest advocates of the measure.* But medical men with few exceptions are opposed to the compulsory sickness insurance scheme. *They believe it will not in fact, bring adequate medical care to those whom it serves, but an inferior quality of care* to that which is at the disposal of the wage earning group today. Medical men believe the plan will result in a deterioration of the physician's standards of excellence, that it will foist upon society a bureaucratic system politically controlled, which will feed and fatten at the expense of the workman and interfere, to the great damage of the patient, with the relationship between him and his physician. These considerations strike at the very vitals of the profession. We are moved deeply by consequences which we envision in this country if compulsory sickness insurance becomes effective, and we find when we travel in Europe where this type of practice has been established, evils which could not be avoided, and perhaps would be aggravated, here.

Let us examine, in general, the provisions of the law as it has been offered for legislative enactment in this country, under the popular name of the "Epstein" law. We shall discuss the results which may be expected to ensue from the establishment of the system in the United States, presenting some of the substantiating evidence from abroad, and analyzing the superior advantages of individualized medical practice over collectivist efforts.

The Epstein law was proposed for enactmen in a number of state legislatures during the sessions 1934-5, and was passed by none.

The principal features of the law are these:

Provision of medical care to all workers within a prescribed income class by "panel" doctors who are paid from an insurance fund.

The insurance fund is financed by contributions of a percentage of wages paid by the workman, an-

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other such percentage contribution by the employer, and a third by the state.

Administration of the law is by boards, councils and committees on which doctors, dentists and labor interests are represented, but the balance of authority reposes in non-professional persons.

The administrative set-up for the individual state described in the bill should open the eyes of those who believe that compulsory health insurance would lower the costs of medical care. At the top is the Health Insurance Board, consisting of a ten-thousand-dollar-a-year Director and three other members, each of whom would receive an annual salary of seventy-five hundred dollars plus traveling costs and incidental outlays. A State General Advisory council of twelve and a State Medical Advisory Council of nine would also be set up, each headed by a full-time finance and a full-time medical supervisor. Districts would be subdivided into local areas, each with its own full-time finance and medical managers. Aiding the local offices would be local councils, the members thereof receiving per diem fees in addition to traveling expenses. These councils, in turn, would be assisted by an unlimited number of local advisory committees, also entitled to draw incidental costs. For this involved bureaucracy (and only a meager skeleton has been sketched), the worker would pay in periodic deductions from his pay, in lowered wages and augmented living costs and in increased taxation.

An independent investigation of the law was made by the Committee on Legislation of the New York County Lawyer's Association, which recommended disapproval of it in the following report:

"This bill seeks to establish a comprehensive state system of health insurance. Premiums are obtained by assessing every employer 3% of his payroll and the employee 1%. The benefits are of three kinds:

"1. Cash for those disabled in any manner whatsoever.

"2. Maternity benefits.

"3. Medical benefits.

"The administration is placed into the hands of three members appointed by the governor and two members of the Health Department. State advisory councils, district offices, local offices, local councils and local advisory committees are created, and the proedure for hearings and appeals are provided. The amount of $100,000 is to be appropriated by the state to initiate the system, but the state is to bear no further expenses.

"The bill incorporates the British compulsory health insurance system. Its purpose is to provide adequate infirmity and disability protection to indigent employees. The estimated per capita medical cost in this country is somewhat over $30.00, and it is believed that by this method the needy would be assured of sufficient medical attention and infirmity protection.

"We believe the bill is open to serious constitutional objections. Contributions are assessed against employers who by themselves or in the course of their business have no causal relation to the conditions upon which benefits are based. To require every employer to contribute towards the expenses of an expectant mother who happened to be an employee—or to require every employer to contribute to the maintenance of some employee who happened to be disabled through an accident entirely disassociated with his employment, would be violative of the fundamental concepts of the State and Federal Constitutions.

"Aside from the Constitutional aspects the bill is further objectionable. The principal of medical treatment "in gross lots" has never proved effective. Various systems allied to that of this bill have been in force for years in several European countries. The mortality tables there have revealed no improved medical conditions. The many annual administrative and other changes inaugurated from time to time in those countries reveal that the system is in a perpetual state of flux and is not beyond the highly experimental stage. To change radically our lifetime method of medical attention through personal choice and to eliminate the "family physician" for an experimental system would be highly unsatisfactory and unwise.

"The bill will inevitably lower the standing of the medical profession. The majority of the doctors will be compelled to submit themselves to the bureaucratic control of a State Department in order to earn a livelihood. As past experience has demonstrated, certain doctors would be favored in the amount of employment they would obtain and other doctors would be forced to different channels to support themselves. The zeal, the inspiration and the intellectual acumen of the medical profession so vital for scientific researches and experiments will be dampened considerably by the regimental control of doctors in the hands of a paternalistic State Department.

"Other objections need no elaboration. The severe assessment against employers would be economically demoralizing. The type of treatment and prerequisites necessary before such treatments are granted are not conducive to expeditions and effective medical attention. The bill further fails to place the control in the hands of the State Insurance Department where some degree of actuarial soundness of the system and efficient regulations therefor would be assured.

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■

CRUM EPLER, M. D.

Superintendent

WOODCROFT HOSPITAL, PUEBLO, COLORADO

"However effective and however meritorious a system of *volunutary* health insurance may be, a state wide compulsory system would be the worst form of governmental paternalism."

The medical profession approaches the consideration of such plans as these with a background of knowledge and experience in view of which we ask respectful consideration of our opinions. We are under a certain handicap in the premises, if we are to be required to submit our brief for the consideration of the general public, who have had no actual experience in giving medical care. Some of the most serious of our objections are based on intimate knowledge of our profession, which grow out of the unchangeable characteristics of human beings in the relationship of physician and patient. It is not easy to make these objections fully clear to laymen without such knowledge and experience. They are not so forceful when stated in print as they are when lived in life. Our friends who believe that compulsory insurance will bring adequate care to the people possess, on their side of the case, soothing gentle phrases of persuasion which simplify a matter which is really quite complex. As a stated problem on a piece of paper it may seem perfect; when it becomes an encountered problem in actual practice, the doctor who is to administer it, revolts. We look behind and beyond arguments such as this: That almost half the people of the country get no medical care whatever, that inasmuch as the average physician's income has been drastically reduced—therefore, "as is easy to see"—all we have to do is to bring medical care to these persons who are without it by compelling them to insure themselves, and they will be well and happy, and the doctor's economic problem will be solved. This may sound to a layman as a self-evident fact, and it is, the way it is put. It perfectly fits our hopes and aspirations. Now the physician is an idealist in his own way, just as the social worker is, but he is just a little more of a realist, because his profession insistently, day after day, calls upon him to examine conditions objectively in terms of how things are going to work. Not how they *might* work, please, if perfect conditions are presupposed, not how they *ought* to work, with human beings making the desirable response, but how they *will* work, actually, realistically, with human beings behaving as they do, and as they may be expected to do for some time to come.

(Continued in March Issue)

The doctor was examining the school children in a rural district.

One little boy was sadly underweight so the doctor asked, "Dont you drink any milk?"

"Nope."

"You live on a farm and don't drink any milk?"

"Nope; we ain't got hardly enough for the hogs."

It was a cold February morning and the sheriff had gone to the cell of Mose Jackson, who was to be hung the next day.

"For your last meal you can have anything you want, and as much of it as you want," said the sheriff. "What would you like, Mose?"

"Ah believe Ah'd lak a nice watermelon," replied Mose.

"But watermelon won't be ripe for six months yet," said the sheriff..

"Ah kin wait, boss; Ah kin wait," replied Mose eagerly.

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Proc. Soc. Exp. Biol. and Med., 1934, 32, 241-245
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